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MEDICAL PRACTICE OF TO-DAY.[1]

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I HAVE been requested to make some remarks on medical practice as it exists to-day. I wish it to be understood that I realize acutely the difficulties of this undertaking. Having thrust my hand into the womb, I must deliver the goods with all congenital defects and ask my audience to offer suggestions as to the care of what I fear may be a hydrocephalic monster!

Let us begin by introspection, taking stock of what we find pleasing to us and also of what we must feel is less satisfying, admitting our shortcomings and offering such suggestions as we can to make us more efficient in service to the community at large.

It is desirable to plot, however lightly, the road along which the doctor of to-day has travelled, the hills over which he has climbed, the path leading to other heights yet before him, with tints and pigments more evolutionary than historical.

Upon this road we must delineate our hero, not as one struggling along, overcoming great obstacles by his own exertion and will to go forward, but as one who is pushed from behind. Knowledge is the *vis a tergo*, but wisdom is its mortal part. And is he whom you see speeding along in the latest model automobile, with an ultra-modern armamentarium at his side, which he has been trained to use but could himself never make, a better man than all who have gone before him? More useful he should be, but not "off his own bat." He is an evolutionary being and should never forget it.

The sum total of our knowledge is greater, but how does the intellect of to-day compare with that of the giants of history too numerous to mention, who were philosophers, merchants and leaders of men? I hold that the protoscientists were just as good, just as capable as any man living to-day.

A high degree of intellectual culture is no new thing. I must confess the men of old had more time to ponder over the infinite and other lesser things than we have in the strenuous life of to-day. Who has time to sit like monks and be wafted to Elysium by contemplation of the navel? There is, indeed, room for doubt if intellects have not suffered for want of time to think. Can archæologists tell us the size in hats that fitted the *neopallium* of 2000 B.C.? If anyone will arrange a debate on "the Commonwealth" between Plato and John Stuart Mill, I am willing to take a shade of odds about Plato.

[1] Read at a meeting of the Queensland Branch of the British Medical Association on July 1, 1921.

What has more than two thousand years done for the average human mind that we find it so far below the plane of wisdom from which Aristotle talked?

The man in the street to-day has no fund of general knowledge. His standards are all home-made and mostly valueless. The power of discrimination between knowledge and not-knowledge is an uncommon gift. Few of us appreciate our utter dependence on arbitrary and man-made standards. These require constant revision and amendment or substitution, processes that are too often neglected. Once a standard is fixed, we are prone to regard it as reliable. This is an error far too common in medical practice. "Never take anything for granted" is the most appropriate motto for the practising physician; more so for the original investigator. Many standards that are crusty with age in the world of science, are probably refutable, but their respectability and honourable source protect them from interrogation. Such veneration for a distinguished ancestry delayed for centuries the discovery of the circulation of the blood. The consequential changes of points of view resulting from this knowledge are prodigious—and where will it end? All that we can say about it is that our state of nescience is less dense. We have a tremendous accumulation of observations of sorts; concerning them we must decide how we are to think and not so much of what we are to think. Few realize that many seemingly contrary statements are indifferent if the point of view appropriate to each is adopted. Many bitter misunderstandings would be happily concluded by appreciating this fact. It is an amusing and instructive pastime trying to locate the other fellow's point of view and the *dénouement* is none the less surprising if you find that yours is on a lower plane.

The Doctor and his Patient.

This relationship is an evolutionary one. The organization of the profession, as it exists to-day, reveals to the individuals of the community who fall sick, the presence of duly qualified medical practitioners, registered under an Act of Parliament, bound by the Hippocratic oath, applying a science and art common to all and founded on the sum total of human knowledge, free from empirical practices, except such as may be determined justifiable by the grand jury of medical science. Yet about half the community seeks advice elsewhere! This phenomenon is a psychological complex and well merits an independent investigation. The doctor is not allowed to advertise his skill by ordinary commercial methods, but must depend upon his work to bring him recommendation. This fame practically all comes to him from his lady patients, for it is said that the conversation among women is never complete without a reference to disease and to doctors they know and do not know. This becomes a competitive propaganda among them, as many of us know to our cost.

The rôle of family doctor is an honourable one to fill. It is full of responsibility and anxiety. Whatever revolutionary changes are in store for the profession, I feel sure that nothing can kill the desire and demand for this affinity. It is essential to the family polity. A consultation with a man of the world, familiar with the seamy as well as the showy side, can produce a mental ease procurable in no other way. Yes, I maintain that the family doctor will prevail.

The doctor is discovered to the people by his plate of prescribed pattern and by his telephone number. The estimate of his worth among the public frequently bears no relation to that of his colleagues. Perhaps that is just as well, as otherwise practice would not be distributed as evenly under other circumstances. It is nevertheless very remarkable that the members of the public make little effort to obtain guidance. Favourable opinions of one another prompt suggestions of self-interest to the lay mind, while the reverse carries an imputation of jealousy or envy. There is undoubtedly an element of truth in the popular view; a truth that can be accepted in a protective sense is a compelling force to the average mind. Superstition, fancy or quaintly-formed repulsions have their influence in affecting a patient's choice, but I believe the greatest dispersive influence is the first named.

The factor that has the most attractive force for patients is undoubtedly unfailing, intelligent interest in the patient, however wearying and uninteresting the case. How far this attentive interest is to go is the great trial of the conscientious practitioner. If the interest developes into zeal to obtain two for himself and one for his patient, a time will come when gates will be barred and the doctor's telephone calls will be less each quarter. The harm that is done by this get-rich-quick process is heard in the complaint that once a doctor is called to a house it is hard to get him out of it.

I would like to refer to the problem of an urgent call when the doctor is not at home. This is a situation which taxes the resourcefulness of the telephone attendant to the utmost. There is, however, one line of conduct, speaking as a general practitioner; the call must not be in vain. I want to emphasize this point, as there are many young men in practice to-day who think they can pick and choose. If I am unable to go myself, I have made it a standing instruction that another doctor is to be sent in my place. It is not right, it is not fair to throw back the onus of obtaining medical aid upon those you hear calling for it. Once the call has been received, it is the bounden duty of the receiver to make it good. Now, this may sound very altruistic, but it is very practical and human. It is a factor that makes a practice and I do not mind giving away the secret. It is an observance that maintains the fame and good name of the profession; the reverse is the most prolific source of its calumniation.

It is no use offering the time-worn excuse that the doctor's day's work is done. The need of his services is constant, at least in the judgement of the public, however ill-timed or ill-judged the call may be. To the anxious parent the psychological moment is passing; a sudden realization of responsibility overwhelms the fool in his paradise. A cry for help is heard on the wire; to you it is "bothera-

tion," to him it is "S. O. S." In a city it is easy to pass the call on to a man young in practice and he might just as well take a chance of a fee and at least get a reputation of coming when he is called. In the country, the doctor must take the responsibility of refusing a call. A little tact, a little temporizing and a little advice will often give reassurance that will last till dawn or a little later. It is not an exaggeration to say that nine-tenths of our urgent calls are commonplace. In fact, it is not possible to say what calls are urgent and what are not. I have often had a call "to look in during the day and see So-and-So," to find most alarming conditions, unrealized in the household, and this must be the experience of every one of us. No one then can gainsay the fact that the doctor on his rounds is always on urgent business, not even the traffic authority. I have had a patient call to see me about an obscure complaint that has, in his opinion, defied all the doctors he ever heard of, on a Sunday afternoon. "I thought it was one of your idle days, doctor." With a feeble appeal to my sense of humour, I could only reply: "Why did you leave me to the last?"

In a well-read text-book on medical ethics occurs this sentence: "In the opinion of some patients, a doctor must neither eat nor sleep like other men, but be at their beck and call, not only in emergencies and on serious occasions, but whenever they please!" Quite so! And what are you going to do about it? You must simply put up with it. There is no remedy suggested in this book; nor is there any.

There is one aspect, however, of the emergency call that requires special notice and that is in connexion with street accidents. I have no hesitation in saying that the responsibility of calling for medical aid in these cases should lie with the police and that the fee for the same should be paid by the police. With an efficient ambulance service, these calls are not so frequent nowadays; nevertheless, they do occur. A call from a police officer *ipso facto* makes the doctor a servant of the people and it is only a parsimonious and despicable act to repudiate this liability.

With regard to calls to moribund patients or in cases of sudden death, where the practitioner has no previous knowledge of the circumstances, I fear there is a want of appreciation in the minds of some doctors of the serious results which may follow the issue of a certificate of death. Certification should be withheld in all such cases in the public interest. The police department are very persuasive in these matters; they fear the expense entailed. We have a clear duty, nevertheless. The certificate of death, in its present form, requires us to certify upon what date we last saw the person alive and, presumably, in a condition to allow an opinion to be formed as to the cause of subsequent demise.

Consultations and Major Operations.

It is growing more apparent every day that the sphere of the surgeon is narrowing. His activity has, I am sure, reached its maximum. I do not want to be diagnosed as a case of *conservatitis senilis*, but as one who sees definite, though faint, long shadows cast before coming events. We should then be more chary in the use of the knife. We must seek confirmatory approval of our decisions to operate. In other words, the time-honoured, yet almost obsolete, custom of consultation must be revived. Operative surgery has done wonders, but it has been abused. It is our manifest duty to avoid adopting a procedure that is not without risks immediate and remote. I need only instance the conservatism which characterizes the writings to-day of the leading gastric surgeons to emphasize my point.

Unfortunately, it is not every man who makes a good consultant. I personally know this to my cost. There are qualities in the constitution of a consultant very difficult to find in one man. One kind will give you no help, another will give you too much, others will insist upon giving prominence to unimportant details, thereby suggesting serious divergence in opinion to the anxious patient when none really exists. An incident of this nature occurred many years ago, so I can relate it. The case was one of ovarian tumour. I advised operation as soon as possible, because a small amount of fluid in the peritoneal cavity, I explained, portended degenerative changes. The consultant, who came at my request and invitation, agreed with me in every respect, except in regard to the presence of fluid. He insisted with great vehemence that there was none there. This serious difference of opinion influenced the patient to place herself in the hands of a quack, who cleverly demonstrated how he rubbed away the tumour as the belly filled with fluid until it was at last impalpable. She was subsequently operated upon by another surgeon when greatly reduced in strength, but only survived the operation for three months.

On the day appointed for a consultation I omitted to examine the bases of the lungs of a patient with marked signs of acute cholecystitis. The consultant left out nothing in his survey of the case and winked his eye softly behind the patient's back. I mention this to warn young practitioners to "leave nothing for the sweeper." Then there are the cases in which there are classical signs one day, but these signs may have departed the next, when the consultant arrives. The obvious moral is: "Examine your patient early, often and late." It may prompt a sense of ridicule in my hearers to tell them that I sometimes go to my patients and pretend to myself that I am a consultant. Results have been good.

These instances go to show how consultations are made popular or unpopular in the profession. I do hope that all those who are called upon to act in this office, will do nothing to depreciate the skill and conscientiousness of those who are looking for help and encouragement in their daily tasks. A consultation must be made worth the money and is not a duty that can be discharged in a few minutes. It means a thorough review, a readjustment of fixed ideas, an exercise in scientific ratiocination. It takes time, we say, yet I have seen a consultant feeling a pulse to get the oportunity of seeing how the time was going on.

Like all arts, surgery has been in all ages subject to a craze. Certain procedures, once in vogue, have died out and have then been revived again. The

operation of circumcision is the best example and if antiquity is a recommendation, it will be hard to depose it. I will not refer to many examples of this craze for too much of a good thing, except to point a moral for to-day. We smile at phlebotomy, at ovariotomy, once performed so frequently that now we are ungraciously constrained to think the temptation to pluck such easy fruit was greater than the therapeutic need of it. The craze for appendicectomy in America made food for comic papers, while many unfortunate dyspeptics have ceased to wonder if the shortest way round was the shortest way home. One asks if the prime value of the *vis medicatrix naturæ* has not been overlooked in the rush for radical cures. The extensive use of surgical therapeutics in practice to-day will be one of the wonders of future medical histories. There is a great need for care and discrimination in the application of the art. The canons for our guidance are written very plainly, but, if we harbour doubts, consultation must be sought. Remember the patient who has never been the same since the operation. That patient will deter others from having operations which may preserve life or save years of suffering.

Relations Between Medical Men.

The true relations between members of the medical profession are defined by such words as "ancillary," "auxiliary," "subordinate," "complemental" and the antitheses of such of these as possess them. There is yet another relation, which is probably the first that occurs to the graduate on entering practice; that is the "competitive" relation. It is ever cropping up and is apt to bring with it a reserve towards, a distrust of and ultimately a positive antagonism to his colleagues. This is entirely due to the fostering of the competitive factor and to a neglect of a proper nurturing of the complemental relation, which brings blessings with it, not only for those immediately concerned, but also for their patients.

The unfortunate influence of competition is universal one would think and the results are a source of shame and reproach to the profession. Let us picture two men in a country town, each with his own following of friends, each regarded and esteemed socially and professionally, and yet they "never meet as they pass by." An unbiassed stranger would find that each one was a good fellow and a credit to his profession. He must, however, qualify his opinion of them when he finds that in their work and their recreation they possess no mutuality. It is a curious cast of the human mind that the townspeople could not see what the stranger saw. This is, no doubt, due to the fact that those who are responsible for the situation, cannot realize the pettiness and the harmfulness of it. One is almost tempted to suggest that when two or more members of the British Medical Association are at variance with one another, they should be suspended from membership and, while so estranged, exhorted in the words of the rubric of the communion service addressed to "those betwixt whom he perceiveth malice and hatred to reign" . . . Strained relations between educated men, engendered by ill-directed competitive propaganda, are a sorry spectacle.

Change of Medical Adviser.

I hardly like to dispute the value of an ethical code that has evolved on lines not dissimilar to the common law. However, evolution is still acting on both and a suggestion of change is pardonable, therefore, in medical ethics. The rules laid down to meet the case of change of medical adviser are, in my opinion, too rigid and calculated to arouse protest or at least promote ridicule among patients and their friends. It does not matter how conscientiously one observes the ritual, there will be imputations. Why all this circumlocution or circummigration, if the end is the same? We must not deny the patient the right to seek and pay for advice when and wherever he chooses. There is a nice manner of taking a patient away from a friend, as well as what I may describe as the method of double theft. Depend not upon the word of the patient on these occasions, but try to prove that your colleague is still your friend. It is wonderful how often a charitable thought will find its justification. The converse is rare.

The Specialist.

In perusing the columns of my medical journals I frequently see exhortations from all kinds of specialists to general practitioners to realize the enormity of their manifold offences. The urologist gets his prostates too late, the surgeon to the "acute abdomen department" is always wailing and gnashing his teeth. In fact, the general practitioners are more or less regarded, like the poor, as necessary evils. Quite recently I heard a specialist refer to the family doctor as almost an extinct species. I feel quite sure that this idea is very far from the truth. The popularity of the specialist to the exclusion of the general practitioner is a phase for which the specialist is largely responsible. He will have to justify the monopoly and I am inclined to think that he will not find it too easy. The general practitioner has, up till now, amply justified himself and it is from his ranks that the best specialists are recruited. Such recruiting does not exterminate the rank and file by any means, but rather leads to the fostering of the complemental relation and the elimination of the competitive element.

I will risk raising the ire of the specialists by offering the opinion that in most instances they will find an all-round advantage in referring to the family medical attendant before treating a patient seen for the first time. The general practitioner is often ignored in this direction. He not infrequently hears that his patient has been side-tracked to a group. This is team work, but not quite of the kind so highly cultivated in the late war. We should encourage this collaboration in civil practice, but must take care that the benefit is for the patient and not for the team. The general practitioner should always be an essential part of any team and I say it fearlessly that he will protect his patient and advise him well as he runs the gauntlet of the team. The specialist is more often at a disadvan-

tage through the short cuts available to him nowadays than he can possibly realize.

A good example has come under my notice. A doctor was called to see a child which alarmed its mother by breathing rapidly and noisily in its restless sleep. "This is asthma, you must send for a physician: I am a surgeon." The physician duly arrived and declared it to be bronchitis of nasopharyngeal origin. "You must send for a throat specialist." The parents were so stunned by this barrage of specialism that they could do nothing; but see, the child is well again! The old-fashioned family doctor would no doubt have administered an emetic in the first instance and left instructions how to give a dose of oil later. He would not have approved of that kind of team work. He might not have known it by the name of foreign protein poisoning, but he would know how to treat it better than those who did. Unless we are careful, team work will fall into disrepute in civil practice.

The specialist will not be surprised if I say that he is much too neglected by the general practitioner. He is also not sufficiently patronized by his own class. How often are patients suffering from obscure complaints sent to a specialist? Seldom, I think! Examination of the ocular fundus will reveal what no other method of inquiry could do. Primary malignant growth of the larynx has been discovered quite unsuspectingly and readily accounted for an enlarged gland in the neck otherwise inexplicable. I am told that oculists have practically all their cases of albuminuric retinitis referred to them by opticians and not by general practitioners. The only obvious explanation is that the opticians look for it and the general practitioners do not. A thoracic aneurysm is not easy to find if not looked for, but it is better to find it yourself, with the aid of the radiologist, if necessary, than to let somebody else "wipe your eye." Such ocular therapeusis, however, has a wonderful effect on the vision subsequently.

General Information.

Every medical man is liable at some time or another to be asked questions by his patients on subjects of public interest which will tax his general knowledge to the utmost. They often place the doctor on the defensive and he should never be at a loss to justify medical science *versus* charlatanism, for instance. I fear that too often the obligation is avoided where enlightenment would render signal service. The cloak of ignorance is now threadbare and is quite pervious to the mind's eye of men and women of to-day. The doctor is expected to be an authority on most subjects, so let him be prepared. If he hath not the *ipsissima verba*, he must talk in true parables. He must, however, beware of being a positivist of the kind that:

Will tell a patient never, under any circumstances, to have an anæsthetic.

Will advise a woman never to get married, unless the reasons can be safely backed up.

Will tell a woman that she will never get pregnant.

Will tell a woman never to have another child, as it would cost her her life, when only a difficult labour or a complication such as sepsis, eclampsia or puerperal insanity is the reason advanced.

Will tell a patient that he may have to terminate pregnancy if hyperemesis lacks its strongest qualification.

Will wean a baby until it has at least eight teeth.

Will discourage the wet-nursing of a motherless child.

Will tell a mother her child will grow out of its fits at the age of seven, fourteen or twenty-one, or die at any of those ages, yet offer no advice in the meantime.

Personally, I do not like the man who is always giving a gloomy prognosis. Neither do I think it is any part of the policy of the healing art to tell a patient that there is no hope of recovery; we may do so only under very exceptional circumstances. Psycho-therapy has always been a force far more potent than many of us are conscious of in our work. It is cowardly in the extreme to save one's bacon at the expense of the hope in a sick man's breast.

I must also enter an emphatic protest against the rôle of the repressor who tells a nursing mother she must supplement (more often substitute) the natural sustenance with artificial food. A young mother is surrounded with a host of friends and relatives, neighbours, busybodies and nobodies, who invariably depreciate and decry her ability to suckle her infant. A final court of appeal is the doctor and, coward that he is, he invariably sides with the powerful *tua culpa* majority and the advertisement propaganda. All sorts of explanations have been offered to show the cause of failure to suckle the offspring by civilized women. If baby foods were not such a feature of the pictorial advertisement and if the mother were given ever so little encouragement, the causes so inimical would be removed. It saves time, saves worry, suits popular opinion, is "justified" by expediency to give the baby the bottle. This, indeed, is "seeking immediate or selfish gain at the expense of genuine principle."

Fancy building up a reputation as a children's specialist on "originality" in methods of artificial feeding of infants. The latest physiological teaching demonstrates the cause of deficiency diseases and an elaborate search is made for "vitamins" to add to the baby's bottle. "One drop of egg-yolk to each bottle, increased daily by one drop until ten are taken." Why go to the hen so often for vitamins, when the mother has plenty. The discouraged mother must hide her diminished head and breasts while this wonderfully prescribed diet is poured into the child. It is futile for the medical attendant to say that he knows mother's milk is superior to anything he can devise. Academically he says it, but practically he ignores it. It is so commonplace and uninteresting and gives no scope for his originality and empiricism Hence the multitudinous methods of "humanizing" what never can be humanized. Often a start is made with a denatured product from the cow. What can you expect of the finished article? The more I try to practise what I preach, the more easy and successful has been my task. I appeal to the psycho-therapists to

come to my aid. The mother, the nurse and the doctor require re-education and baby-food traffic strict regulation.

Preventive Medicine.

I have said that all who fall sick in a community, know where to go for relief. It would appear that the average medical practitioner is occupied practically the whole of his time in the art of cure and this is so. Little is done in the way of prevention. So much so that the early or prodromal signs of many illnesses escape the notice of clinical investigators.

We are expected to look to the public health authorities for all the activities in preventive medicine. With them we find that to a great extent their motive for action is a notification that something has got ahead of them. Then they start the chase well behind scratch. As a contract, in the world of mechanics a boiler inspector is a man whose business it is to see that boilers do not explode. A fitter and greaser are employed in keeping running machinery in good order and always running while in good order. The gauge, the testing hammer and the oil-can are in constant use, not forgetting spanners. The sphygmomanometer, the percussion hammer and the castor-oil bottle and some screwing up advice are only brought into use by the fitters and greasers of the profession, physicians and surgeons, etc., when the human machine has broken down. Here, it seems to me, is the great opportunity of preventive State medicine. At present, it is practically only in the power of the State to establish a bureau to which a man, woman or child, especially the child, may go to have an inventory taken. Here no treatment should be initiated. The individual must be free to choose his physician and carry the report of the bureau with him if his case requires treatment. Care should be taken to advise the patient against quacks and charlatans. It may be pointed out that the regular medical practitioner has vested in him more or less the sum total of human knowledge, while the quack has vested in him the fullest appreciation of the sum total of human gullibility. The former has of his profession joy in the process, the latter sees only joy in the result. His motto is: "Doubtless the pleasure is as great of being cheated as to cheat."

Preventive medicine is theoretically in a very advanced state; practically, it is non-existent. On paper, American style, it has won the war; practically, it has only made numerous false starts. Here and there we see a beacon brightly burning. It soon burns out for want of more of the "right oil." The great organization has not yet arrived. Everything is fitful; the people, aroused and alarmed by a plague, spend money lavishly to overtake the proverbial horse. Meanwhile, expediency is busy repairing the lock on the door of an empty stable. A feverish search, like the Holy Grail, goes out to find sensational cures, but preventive medicine is left out of the team. Like the "Pretty Sister," she does not sit and weep, but waits for the day when she will be shod with glass slippers then to make her triumphal march.

Preventive medicine cannot be advanced by academic research alone. We have enough of arms and ammunition to take the field at once and help the people assailed in their homes, in the street, in the school and their workshops and places of amusement.

Take the schools! I give due credit to the conscientious medical inspectors; but how much of their work is preventive? Johnnie is sent home to his parents with a card to say that he, Johnnie, is suffering from adenoids. The idea, I take it, is that the removal of the adenoids will prevent, let us say, deafness. What is done to prevent adenoids? Why begin the meal by sucking the meatless end of the cutlet? Conditions which have given rise to adenoids, have usually done a lot of harm to the child and it is often too late to remedy what should have been prevented.

I would like to see a more intelligent interest taken by the profession in preventive medicine, especially as applied to the child. "There is no more promising field." . . . Practical guidance on this subject is not a feature of general practice. What there is of it is often contradictory and puzzling to the parent who seeks it. This should not be so. It leads to a want of confidence and there is nothing left but to fall back on rules laid down by somebody over the fence or in the tram-car. The profession does not take the problems seriously, yet how serious they are! "The majority of diseases from which children suffer, it is within the power of man to prevent." All I can exclaim is: "Where is the man?"

Recapitulation.

The doctor of to-day is the child of evolution; "the old order changeth, giving place to the new," but let him remember that, though "knowledge is proud that he knows so much, wisdom is humble that he knows no more."

Of the doctor and his patient, it is a trite saying that, if no cure results, it is at least comforting that no harm has been done.

Between medical men complemental relations are the salt of our medical earth and the balm of all medical wounds. Let us put it at once in block type in "The Practitioner's Codex." When patients leave us, the ill wind has a saving grace and that which blows west to-day, blows east to-morrow.

Of specialists and general practitioners I must ask Rosalind in paraphrase to speak: "I charge you, O, general practitioners, for the love that you bear to specialists, to like as much of their play as please you: and I charge you, O, specialists, for the love you bear to general practitioners, as I perceive by your simpering none of you hate them, that between you and your colleagues the play may please." . . .

On general information I seem to have a lot to say. My excuse is that a doctor's opinion on any subject will always carry weight. By any subject I mean those centreing in the human interest and what others are there? For this task let each man possess in his handy bookcase a copy of the Bible, of Shakespeare's works, a history of the world, a handy encyclopædia and a good dictionary. Above all, be observant, study Nature in its beauty and when "red in tooth and claw."

In preventive medicine, concentrate on the child;

he will lead you to the man. Then go back to the child again. It sounds like a moving picture and so it is, but not set in a gilded frame, alas!

I can only sum up this discursive exercise by repeating the time-honoured injunction, applicable both to patients and to colleagues: "Do as you would be done by!" and keep as far as one can from its modern variant: "Do others or they will do you!"

HIBBS'S VERTEBRAL FUSION OPERATION.

A Summary, With Notes Upon the Operation in Two Cases.

By **Athol S. M. Tymms, M.D., M.S. (Melb.),**
Assistant Surgeon to Out-Patients, Melbourne Hospital: Demonstrator in Anatomy, Melbourne University.

In 1911 Russell A. Hibbs, of New York, introduced an operation for stiffening the knee-joint by making use of the osteogenetic powers of the bone and periosteum of the patella to bridge the gap between the femur and tibia. Later he applied this principle to the spinal vertebræ in cases of Pott's disease, with the object of eliminating motion in the diseased area.

About the same time Albee had applied similar principles in his method of bone transplantation or "grafts," for fixing the spinal vertebræ.

Previously, methods of fixing the vertebræ by wiring and plating had been introduced by Hydra and Lange.

Hibbs, utilizing the osteogenesis of bone and periosteum, further elaborated his operation, with the object of producing a maximum of fusion or ankylosis in the posterior aspect of the verebral column in the region of the diseased vertebræ. In effect, he now produces an arthrodesis of the lateral vertebral articulations and a syndesmosis of the spines and laminæ.

In October, 1918, he published a paper dealing with a series of 210 cases of vertebral tuberculosis operated on at the New York Orthopædic Hospital by his fusion method and it was my good fortune, whilst visiting the chief medical schools and hospitals of Canada and the United States, to be present in New York at that time and to have the opportunity of seeing a large number of such patients operated on at that clinic. In addition, through the courtesy of Drs. Farrell and Humphries, of that hospital, I was enabled to see, amongst other cases, a number of these patients after the operation.

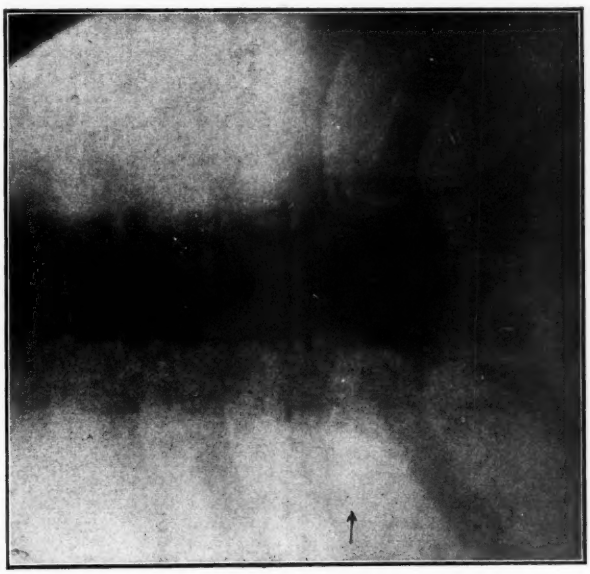

Figure I.

Case I.—Skiagram of Spine, showing active tuberculosis of tenth and eleventh dorsal vertebræ, with abscess ventral to the vertebræ.

Operation.

It is not intended to give in detail the technique of the operation as described by Hibbs, nor as seen by an observer. The initial procedure is as in the case of a laminectomy. The incision is made in the middle line, over the spines, including two healthy vertebræ above and below those diseased, and is carried through the subcutaneous tissues and interspinous ligaments and periosteum to the bone. It then resolves itself into a subperiosteal dissection and exposure of the dorsal (posterior) aspect of the vertebræ, the dissection proceeding as far laterally as the bases of the transverse processes, to expose the lateral articulations. All fibrous and ligamentous tissues are removed between adjacent edges of laminæ and spines and fresh bony apposition increased by turning down small spicules of bone from each lamina on to the next below; the lateral articulations are denuded of their cartilage; the spinous processes are fractured and turned down upon one another; when completed, there is left an open tube of periosteum in which are seen joints bared of cartilage on each side, bared adjacent laminæ in opposition above and below on each side and bared spinous processes in contact in the middle line, five points at which direct osseous fusion can occur.

The periosteal tube, the subcutaneous tissue and the skin are brought together with catgut. The patient is kept in bed for two months on a Taylor's brace, which is continued for six to twelve months, according to circumstances. The usual hygiene for a tuberculous patient is adopted.

Remarks.

The details of the above operative procedure are easy to carry out, but tedious. They must be dealt with in methodical stages, a little at a time, no attempt being made to do too much at once. The constant use of small pieces of gauze as packs in each stage is essential in keeping a dry field. To appreciate the various details in its performance and to get an accurate idea of the technique, one should see the operation actually performed. A capable anæsthetist and a good assistant are also necessary.

Hibbs has had made a few special instruments which, though not essential, assist materially in a careful, thorough and accurate operative dissection. Among these may be mentioned the long, narrow, T-shaped skin forceps for holding the towels in position and for preventing oozing from the skin edges; the short-bladed scalpel; the curette with a small flat cup upon a long thin shank for denuding the lateral articulations; the curved gouge and the specially shaped bone-cutting forceps for fracturing the spinous processes.

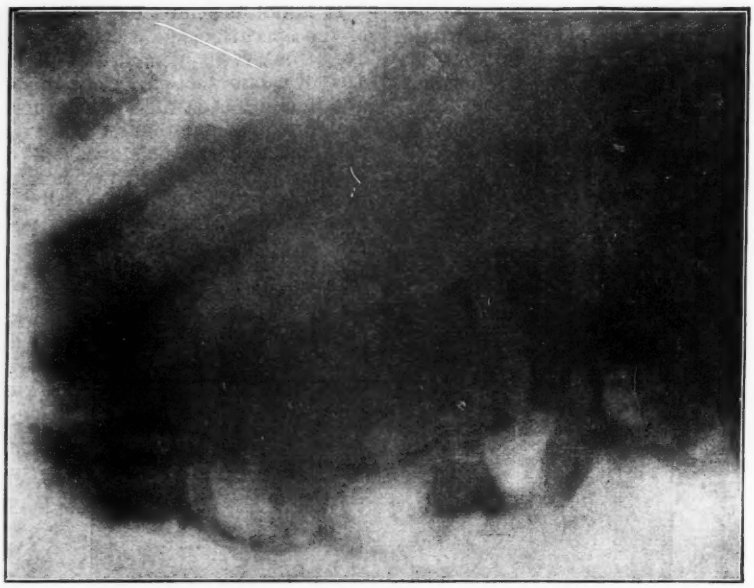

FIGURE II..
Case II.—Skiagram of Spine, showing ventral wedging and dorsal convexity in the lumbar spine.

The assistant is well versed in the use of the dissecting forceps in the initial stages of the operation and the manipulating of the small gauze packs constantly used as the operation proceeds. Hibbs lays stress upon the following points in the operation:

(1) The dissection must be subperiosteal.

(2) Care in the complete removal of all tissue on and intervening between the bones exposed.

(3) At least two healthy vertebræ above and below those affected by the disease must be included in the operation field.

FIGURE VI..
Case II.—Skiagram of Spine After Fusion Operation.

Results.

In Hibbs's 210 cases there were no operative deaths. The incisions all healed by first intention and shock was not a prominent feature. The cases were not selected; they included those in which from two to eleven vertebræ were affected and did not exclude those in which deformity, abscesses, paraplegia and lesions elsewhere were apparent.

Hibbs regarded 157 patients, or 74.7% as cured and 10.5% as doubtful, *i.e.*, they had some evidence of tuberculosis, whether local or general. The deaths over a period of seven years were 31, or 14.8%, from the causes shown in Table I..

Where a sufficient number of normal vertebræ are not included along with the diseased in the operative area, too short a fusion may result and may be unsatisfactory in producing a cure, because of imperfect fixation. A proportion of Hibbs's early operations failed on this account. Failure of fusion or pseudo-arthrosis he entirely attributed to faulty technique, being brought about by incomplete removal of all intervening tissue between the vertebræ and clearing of the lateral articulations, hence poor

bony contact and deficient osteogenesis. There were four or five cases of this nature in his series. A second operation, in the case of too short a fusion or formation of a pseudo-arthrosis, is not incompatible with an ultimate cure.

Table I..

Disease.	Number.	Average Time Before Death.
Miliary Tuberculosis ..	13 ..	2.4 years
Meningitis	5 ..	1.3 years
Pulmonary Tuberculosis	4 ..	2.6 years
Pneumonia	3 ..	4.0 years
Amyloidosis	3 ..	3.3 years
Heart Disease..	2 ..	4.0 years
Septic Meningitis (as result of mastoid operation)	1 ..	3.0 years
	31 ..	3.0 years

The majority of the patients were young subjects, only sixteen being between the ages of 15 and 50. The average age was 14 years. It is well known that patients of advanced years respond more slowly to any form of treatment, but particularly resent any operative interference.

The average duration of the disease at the time of operation was from four to six years. Thirty-eight patients only had the disease less than one year. Of seventeen patients who had had the disease less than six months, thirteen, or 82%, were cured, whilst in the total series of 210, with an average duration of from four to six years, the percentage of cures was 74.7. The accurate determination of the duration of the disease is often difficult. It is just in these early cases that treatment by mechanical splints, etc., is indicated before operative measures, but it would seem from the above that an improvement upon conservative results might be expected from early operation.

The number of vertebræ involved influences any form of treatment. It indicates to a certain extent the activity of the disease. When a few vertebræ are involved, the amount of operative work is rendered less and easier and a better fusion is more probable.

The operation, however, can be performed when as many as eleven vertebræ are diseased and when more than one focus is present in the spine; it can be performed no matter whether the disease is located in the cervical, dorsal or lumbar regions.

Of thirty-five patients operated upon with paraplegia or pressure symptoms, thirty were cured of the paralysis and disease. Two in whom the disease was cured remained paralysed, whilst the remaining three died from miliary tuberculosis (two) and amyloidosis (one). Conservative treatment in paralysis, it is recognized, has given equally good results, whilst the operative measures of laminectomy and costo-transversectomy for compression have been disappointing. Hibbs's operation is not one for compression *per se*, but his results in such cases are striking.

Extension of the disease, in spite of good treatment and technique or following faulty dissection with failure of fusion, may lead to paralysis as a natural complication. The latter, however, may arise as a sequel to injury at the time of operation. In the tedious dissection of ligaments and tissues between laminæ and between the spines, or when the gouge is used to raise specules of bone from the laminæ, the instrument may slip between and damage the cord. This is especially likely to occur where the bones are softened by tuberculous invasion. This accident occurred in my first case (J.B.). Hibbs mentions that one of his patients developed paralysis after operation, but does not indicate the time of onset or its cause, though he re-operated.

Following upon his operation, Hibbs found that the general experience was that the deformity of the spine was decreased, or that there was no increase (83%). The operation *per se* accounted for a slight decrease in all cases from the alteration in the position of the spines, but a decrease more than could be accounted for by this was observed. This decrease was more marked when the lumbar region was affected. In 17% there was a definite increase in deformity. The increase was either slight or marked, but did not necessarily indicate failure of cure. A slight increase may have been due to developmental changes in an adolescent, but too short a fusion was the chief factor in his earlier cases. A marked increase followed failure of fusion or pseudo-arthrosis from faulty technique, or extension of the disease from failure of the patient to respond to treatment.

The existence of abscesses or sinuses does not contra-indicate operation, unless in the operation field, nor does the presence of other foci in the bones and joints. The question of operation would be influenced by the extent of any lung affection. These foci, however, would indicate the advanced stage and to some extent the type of the disease and would thus influence prognosis. It was not generally noted that "a lighting up" or spread of the tuberculous infection followed operation. This is more likely to occur when the disease affects elderly people or where the disease is opened into, as when the spines and laminæ are involved (rarely). A knee-joint infection followed one of Hibbs's operations. The large proportion of the deaths in his cases from miliary tuberculosis (thirteen) might be attributed to operation, but the course of miliary tuberculosis is rarely longer than three weeks, whereas the average time after operation before death occurred was 2.4 years. Three patients died within six months of operation.

Notes of Two Cases.

The following are the notes of two cases which presented themselves to me in 1919 and in which the vertebral fusion operation of Hibbs was performed. I am not aware that this operation has been previously performed in Australia and believe these cases to be the first to be reported in The Medical Journal of Australia:

Case I.—J.B., *ætas* 57, stonemason, was first seen in August, 1919, when he gave a history of having "strained his back" six weeks previously whilst at work. This was followed by pain in the back, which was worse when he was working. The pain radiated to the abdomen, was felt chiefly about the umbilicus and became continuous. About this time he noticed a prominence in the middle of his spine, was out of sorts, had no appetite and lost weight.

The bowels were constipated and micturition was a little hesitant. He had no cough and had previously been well.

Examination.—The patient was short, of slight build, with a distinct stoop. His pupils were equal and reacted; his chest was apparently normal. His abdomen was slightly distended, but there was no tenderness. All the reflexes were equal and active. The spinal column showed a small kyphotic prominence, with its maximum convexity corresponding to the tenth dorsal vertebra. There was local tenderness, no percussion pain and no limitation of movement of the spine. A tracing of the deformity was not taken and a photographic view was not sufficiently successful to be reprinted.

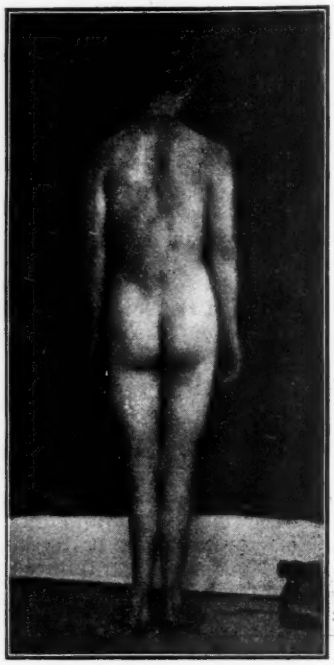

Figure III..

Case II.—Photograph Fifteen Months After Operation; dorsal view. Note the flattening in the thoracic region.

The von Pirquet test yielded a positive reaction. The report of an X-ray examination of the spine indicated that there was "collapse of the tenth and eleventh dorsal vertebræ from active tuberculosis," whilst the shadow of an abscess ventral to the vertebral column was apparent (see Figure I.).

He was fitted with a Taylor's brace, pending admission to hospital for operation, prior to which, on October 17, 1919, his temperature was normal and his pulse-rate 108. No physical signs were detected in the heart, lungs or nervous system. The spinal deformity appeared to be unaltered, but there was then slight limitation of movement, with pain on attempted rotation. The urine was normal.

Hibbs's vertebral fusion operation under ether anæsthesia was carried out. The incision exposed the spines of the eighth to twelfth dorsal and first lumbar vertebræ. The details of the operative technique, as described by Hibbs and as demonstrated to me in New York, were followed. After the stage in which the articulations had been curetted and the laminæ and bases of the spinous processes freed of ligaments and intervening tissue, a gouge was used to turn down spicules of bone upon the laminæ. In doing this over the tenth dorsal vertebra, which was mostly affected and movable, pressure on the gouge caused it to slip and produce sudden concussion of the cord. The remaining stages of the operation were completed and the wound closed in layers by interrupted catgut sutures, the skin with horsehair. The Taylor's brace was re-applied and worn during the after-treatment.

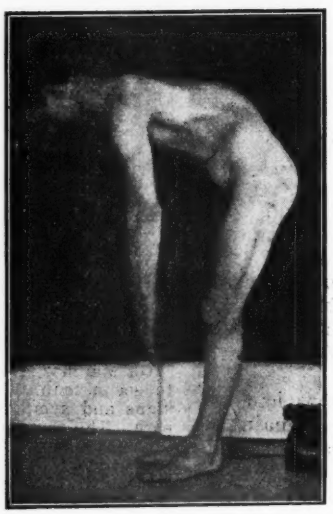

Figure IV..

Case II.—Photograph Fifteen Months After Operation; view in half-bending posture. Note the flattening of the upper part of the abdomen and the lumbar dorsal convexity.

There was no shock. On recovery from the anæsthetic paraplegia and later retention of urine were observed. The wound healed by first intention and the deformity of the spine was not apparent. The paraplegia improved and progress was excellent until the twenty-sixth day after operation, when he had a rise of temperature to 37.5° C.. On the thirty-seventh day his temperature rose to 39° C.: he became restless, irritable and his mind wandered. His breathing became difficult, the respirations were 40, the pulse-rate 130 and the temperature reached 39.5° C.. Cyanosis, with crepitations all over the chest, gradually supervened and he died from acute miliary tuberculosis on November 28, 1919, six weeks after operation. The wound remained perfectly healed and there were no suspicions of uræmia. No X-ray examination was made subsequent to operation and no autopsy was obtainable.

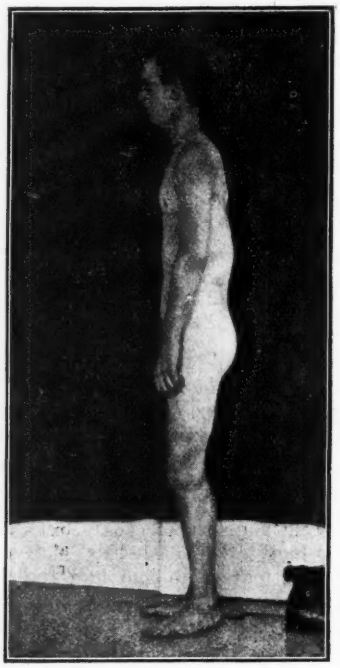

Figure V..

Case II.—Photograph Fifteen Months After Operation; lateral view, showing general profile of patient.

Case II.—C.D., *ætas* 19 years, a grocer's assistant, was first seen in September, 1919 for a "prominence of the spine which had gradually appeared in the past ten years." There had been no pain or stiffness of the back, but he was getting more "round-shouldered," noticed especially when sitting. He had had no illnesses, had not lost weight and had no cough. His appearance was exceptional. He was tall, thin long-limbed, with a noticeable stoop. He had a left external strabismus, prominent ears, narrow nose and very little chin. The mouth was "rodent-shaped," the palate very high and extremely narrow. His chest was prominent ventrally; there was no beading of the ribs. His abdomen was long and very flat. Double *genu valgum*, which was worse on the left side, and flat feet were present. The spinal column presented the converse in regard to its normal curves. There was a marked kyphotic prominence in the lumbar region, maximum at the third lumbar vertebra whilst the thoracic region was remarkably flat. A slight left dorso-lumbar scoliosis was present. The cervical region was normal. The spinal movements were normal as regards pain or rigidity. Hyperextension did

not obliterate the lumbar prominence. "Touching-toes" increased this prominence and it was seen that most of the flexion occurred here. Right hip flexion was limited to a right angle, but painless; attempts at further flexion produced marked flexion of the spine at the centre of the lumbar deformity. On stooping and sitting he attained those positions by undue flexion in the lumbar region. Excessive flexion produced pain locally. Lateral rotation at the hip was slightly limited, but painless. The lower limbs were equal in length and the buttock folds were normal.

The movements of other joints were normal. There was no family history of tuberculosis. The von Pirquet and Wassermann tests did not yield reactions. An X-ray examination of the spine (see Figure II.) was made by Dr. Clendinnen, who reported that there was "localized collapse of the anterior portion of the body of the second and third lumbar vertebræ from deep-seated, slow absorption, probably tuberculous."

In the absence of any recent pathological process in the hip and in view of the X-ray findings and the increasing deformity of the spine, it was decided to perform the Hibbs's fusion operation. This was carried out on October 30, 1919, in the same manner as in the previous case. The operation was more easily performed in this case, because of the pathological presence of the dorsal convexity in the lumbar region as opposed to the normal curve. A Taylor's brace was worn prior to operation and continued during the after-treatment.

There was no shock from the operation; the wound healed by first intention and the lumbar deformity was decreased. He remained recumbent for six weeks. Suitable treatment to increase the hip movement and to improve the general appearance was adopted. He reported at regular intervals for three months, when he resumed work. He was seen again fifteen months after operation, when the photographs (see Figures III., IV. and V.) and X-ray plate (see Figure VI.) were taken. His health had been excellent; he had been able to continue with his usual occupation and had frequently indulged in swimming and diving. The hip movements were normal. He could sit, stoop and "touch toes" freely, without pain or discomfort.

The lumbar prominence was still apparent when stooping, but very much less pronounced. Fusion had occurred between the vertebræ in the field of operation; it could hardly be said that he was "round shouldered." The other traits peculiar to his appearance were not perceptibly changed.

Comment.

Space does not permit of a discussion of the pathology of the condition of this patient. The alteration in the lumbar curvature may have been due to such causes as congenital changes, injury, rickets, syphilis, tuberculosis and the osteo-arthrites, whilst compensatory changes in the spine may have resulted from an affection of the hip, which limited flexion (as opposed to those conditions which limit extension), or from static conditions in an adolescent. It is, however, to be noted that the spine in the thoracic region was flattened, whilst the kyphosis had its maximum at the second and third lumbar vertebræ.

I was interested to observe that Hibbs had extended his fusion operation into the domain of scoliosis and some recent operation cases I saw, where operation was performed in the worst types of this condition, were rather impressive. There would, therefore, appear to be a possible scope for this operation in the scolioses of paralysis particularly.

It is not intended that these notes proclaim the merits or otherwise of the Hibbs's fusion operation. The cases are reported to show that the operation has been attempted in Australia and to revive in the minds of those who had read the reports of Hibbs, the possibility of the indication of this operation in any particular case If any treatment be evolved which can promote or hasten the early cure of a person affected with tuberculosis of the spine and can satisfactorily improve a spinal deformity, it should be given every opportunity. Hibbs makes this claim.

Conservative treatment will remain the treatment usually adopted and, with increased attention to details, more effectual will be its results. It is essentially long and financially embarrasses both the patient and the general hospital.

Operative measures are hence resorted to, each with its particular purpose, but all adjuncts to the one great aim—rest. Amongst these measures various modifications of Albee's original bone-graft operation have received greatest consideration. The Hibbs fusion operation is based on similar principles, is not more difficult and its results, as its author shows, are encouraging.

It is by a knowledge of existing methods, the indications for the adoption of any particular method in any individual case and by the judgement and skill displayed in carrying out the details of the method of treatment decided upon, that the best result can be obtained for the patient.

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Reports of Cases.

A CASE OF ACUTE FRONTAL SINUS SUPPURATION, FOLLOWED BY MULTIPLE FRONTAL LOBE ABSCESSES.[1]

By **R. Graham Brown, M.R.C.S., L.R.C.P.,**

Honorary Surgeon, Ear, Nose and Throat Department, Brisbane General Hospital.

The following are notes on a case of acute frontal sinus suppuration which was followed by multiple abscesses of the frontal lobe of the brain on the same side in a General Hospital patient.

On March 2, 1921, I was asked by Dr. George Thomson to see a man, J.P., aged 24, who displayed well-marked signs and symptoms of left-sided acute frontal sinus disease. The same afternoon I attempted to relieve his condition by partial middle turbinectomies and intra-nasal enlargement of the fronto-nasal ducts on both sides. He was given powders of 0.3 gramme of aspirin, 0.12 gramme of citrate of caffeine and 0.3 gramme of veronal every four hours, with the usual dose of calomel and magnesium sulphate. In addition, he was given a spray of cocaine and adrenalin. Through an oversight the patient was given 2.9 grammes of veronal before it was stopped. (I usually stop veronal after three or four doses.) On March 5 the patient's condition was considerably worse and his mental state, after having had the continued doses of veronal, was

[1] Read at a meeting of the Queensland Branch of the British Medical Association on July 1, 1921.

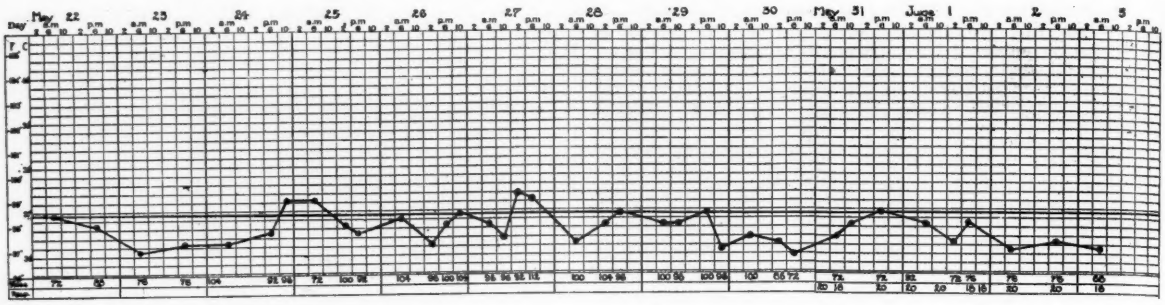

Figure I..

such that he gave us but little help regarding his complaints. I considered that an external operation was necessary and so, under local anæsthesia (which, by the way, was a very simple procedure, owing to his confused mental condition, resulting from the large dose of veronal), did a radical frontal sinus operation, by removing the floor and the contents, after the method now practised by Drs. Herbert Marks and Robert Godsall, of Sydney. The sinus contained pus under pressure and measured about 10 c.cm.. An excellent view was obtained of the posterior and anterior walls; I was very confident that the condition had been thoroughly dealt with. There was no sign whatsoever of any necrotic area on the posterior wall.

On the seventh, a slight blurring of the right optic disc was noticed, but, as far as the wound was concerned, progress was very satisfactory. The patient's condition, however, was still drowsy. Up to this time collosol manganese was given subcutaneously at intervals.

On March 20 the patient complained for the first time since the operation of a pain in the head and he vomited some greenish fluid.

On March 21 and 22 there was still vomiting and the patient complained of dull pains in the head. The patient in the interval had been allowed out of bed, but on March 27 there was a sudden onset of right-sided hemiparesis, with absent knee-jerks on both sides; there was right ankle clonus and an absence of the plantar reflex on the right side, but no Babinski's sign. The patient, however, gradually got over this condition of paresis and headache and the papillœdema, which had increased on both sides, began to subside again.

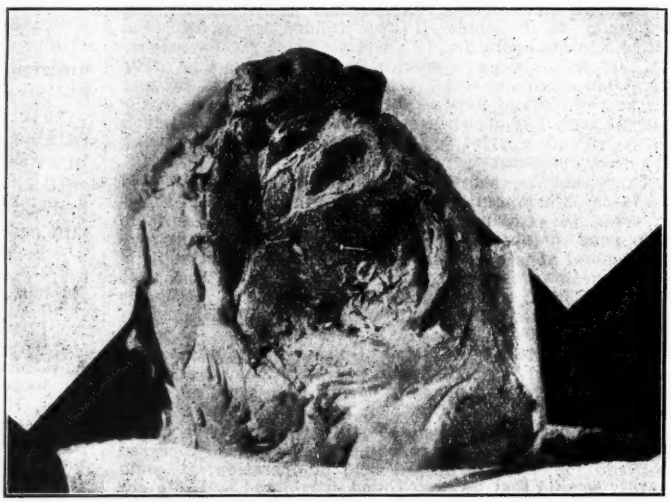

Figure II..

Figure III..

On May 7 the patient complained again of not feeling very well and had severe headaches. There was stiffness of the neck present and marked papillœdema on both sides, the left being more marked than the right. Lumbar puncture was performed, but there was no definite evidence of increased intra-thecal pressure. Examination of the cerebro-spinal fluid and of the blood showed that they were both sterile; there was a slight leucocytosis, the white cell count being 9,000. There was no vomiting on May 12 and knee-jerks were equal on both sides; the abdominal reflexes were equal and the grip was as strong with the right as with the left hand. The foot pressure, both downwards and upwards, was equal on both sides and there was no Babinski's sign.

On May 19 I made the following note: "There are definite indications of increased intracranial pressure; the cerebration is slow; the temperature is slightly sub-normal; the pulse-rate is 60; chronic left frontal lobe abscess." Lumbar puncture again gave negative results. An X-ray photograph of the left frontal region was taken by Dr. McDowall and he advised us on May 20 that "the left frontal lobe was obscured in the upper portion." During a conversation with him the next day he said he "thought there might be a condition of multiple abscesses in the frontal lobe." Not having any

definite indications as to the localization of the intracranial trouble, I could not make up my mind whether to do a frontal or a temporal decompression. However, on May 23 I operated under general anæsthesia and trephined over the frontal region, the lower margin of the trephine being about 1.2 cm. above and 1.2 cm. internal of the external angular process of the frontal bone. When the disc of bone was removed, the patient suddenly stopped breathing. There was a distinct pressure outwards without pulsation of the *dura mater* and a fluctuating swelling could be felt underneath. While the anæsthetist was performing artificial respiration by gentle pressure on the chest wall, I punctured the *dura* and brain in a backward, inward and slightly upward direction and obtained pus at a depth of from 1.2 cm. to 3 cm. from the surface. Forty-five cubic centimetres of greenish yellow pus were obtained. There was no fœtor, but there was a distinct sour smell, much like the smell of milk when it is beginning to sour. The patient the next day had improved slightly, but later on he returned to his former lethargic condition. He made no complaint regarding headache. This behaviour made me consider the advisability of again interfering, but, the outlook being so unpromising, I preferred to let the patient alone and he died suddenly on the morning of June 3.

A *post mortem* examination was performed and the brain I here show you. There are three abscess cavities, as will be seen from Figures II. and III., two large ones and a smaller one in between. The left frontal lobe is practically destroyed. You will also see that the cavity I drained contained no pus but only blood clot. You will also notice that all the cavities are bounded by definite thick and tough capsules, which suggest that the abscesses were probably present when the patient was first seen. On examining the brain side of the frontal sinus, two minute necrotic areas were seen. It is evident that the infection spread from the frontal sinus through the *dura mater* in the substance of the brain, either by vessels or lymphatics. There were no adhesions of the coverings of the brain, except round the trephine opening.

The case illustrates what might happen (but, fortunately, rarely happens) in an acute case of frontal sinus suppuration; it also illustrates the difficulties with which the surgeon is surrounded in dealing wth abscesses or, for that matter with any tumour of the frontal lobe. The case is, I think, sufficiently interesting to warrant my reporting on it in detail.

A CASE OF SUBACUTE VOLVULUS OF THE SIGMOID COLON WITH PULMONARY FEATURES.

By **Harold Harbison, M.B., B.S.,**
Resident Medical Officer, Melbourne Hospital.

J.R., *ætas* 38, was admitted to the Melbourne Hospital on May 11, 1921, complaining of severe abdominal pain of five days' duration. The patient was an invalid pensioner, owing to muscular wasting of both forearms and hands.

For three years there had been recurring monthly attacks of abdominal pain, but constipation had not been a feature of his past illness.

The present attack commenced five days before his admission to hospital, with abdominal pain intermittent in severity, but associated with a dull aching across the hypogastrium. He had vomited once only, at the commencement of the attack, but diarrhœa had been present since the onset.

On admission his temperature was 37.2° C., his pulse-rate 80 and his respirations 24 per minute. The tongue was dirty and the breath was foul. Examination of the thorax showed that the apex beat was not palpable, but two fingers' breadth of cardiac dulness was demonstrated to the right of the sternum.

There was hyper-resonance, tympanitic in quality, over the left lung anteriorly up to the level of the third rib and the coin percussion test elicited a bell-like chime over the same area, but was also conducted without change of note down to the left iliac fossa.

The abdomen was distended and resonant, with generalized tenderness, but no rigidity. There was no dulness in the flanks.

On the day after admission (May 12), the temperature rose and the pyrexia continued remittent in type throughout the illness. The total white cell count showed 5,000 leucocytes per c.mm.. The Widal test gave an agglutination in a dilution of 1: 80 with typhoid bacilli and of 1: 10 with paratyphoid bacilli A and B. The Wassermann test did not yield a reaction. The urine presented no abnormality. The differential diagnosis at this stage was between intestinal obstruction, diaphragmatic hernia, enterica, tubercular peritonitis, or some supradiaphragmatic lesion, such as pneumo-thorax.

On May 18 constipation became absolute, with retention of high enemata. Radioscopy by Dr. Praagst showed very marked distension of the transverse and descending colon about the splenic flexure, with elevation of the left diaphragm to the third rib in the nipple line and displacement of the heart to the right. The movements of the left side of the diaphragm were very limited.

After the administration of a barium meal the stomach was noted to be displaced to the right, with an apparent hour-glass defect. The patient's condition did not permit of a complete examination by the opaque method. Auscultation of the chest at this stage revealed a friction rub in the left axilla.

Mr. Victor Hurley saw the patient in consultation with Dr. Boyd and operated on the night of May 19, 1921.

Laparotomy revealed an enormous distension of the large bowel, with a volvulus of the sigmoid, which presented two and one-half twists in a counter-clockwise direction. This was untwisted, the distended bowel was punctured and deflated, the puncture invaginated and sutured and the abdominal wall closed up.

The patient did not rally after the operation and died on May 20, 1921.

The *post mortem* examination was conducted by Dr. N. Hamilton Fairley. The following pathological changes were observed: A terminal peritonitis was found, associated with a colossal dilatation of the colon, 22.5 cm. in diameter, which, while affecting the whole of the large intestine, especially involved the sigmoid descending colon and splenic flexure. The splenic flexure was ballooned in direct relationship to the left side of the diaphragm, which was elevated to the third interspace.

The lower lobe of the left lung was completely collapsed, being solid, blue and airless and sank in water. The heart was displaced across to the right side of the chest, so that less than one-third of its area was situated to the left of the sternum.

It was found that the splenic flexure and transverse colon were enabled to produce such an intensive local effect on the left half of the diaphragm owing to the almost complete absence of the left lobe of the liver, which organ presented a compensatory hypertrophy in the shape of a right Reidel's lobe.

The autopsy clearly showed the danger of perforating the colon in an exploratory needling of the left side of the chest in such a case as this.

The meso-sigmoid was remarkable. While its base was not more than 7.5 cm., its length and height were 30 cm. and 22.5 cm. respectively. In consequence, there was great mobility of the sigmoid flexure, with every opportunity for twisting on a limited pedicle.

The interior of the colon was filled with fluid fæces, while its walls were atonic, thin, somewhat inflamed and markedly ulcerated, the closely set stercoral ulcers extending to the muscular coat.

Commentary.

Certain anomalous features, such as the subacute onset and course, the leuconenia, the remittent temperature, the spurious diarrhœa and the pulmonary features, make this case an extremely interesting one.

Evidently the twisting of the meso-sigmoid was not, as usual a sudden process, but gradual, and the spurious diarrhœa was a manifestation of a subacute obstruction, with distension of the colon and stercoral ulceration. This

latter condition was responsible for the remittent temperature.

The absence of the left lobe of the liver enabled the splenic flexure to exert a phenomenal influence on the left half of the diaphragm, with resorption collapse of the lung and displacement of the heart.

The pulmonary hyper-resonance and the coin sounds were due to the tremendously dilated colon.

I am indebted to Dr. Boyd for permission to make this report and to Dr. N. Hamilton Fairley for his assistance in its preparation.

UTERINE INCISIONAL HERNIA.

By J. Crawford Robertson, M.D., F.R.C.S. (Edin.),
Assistant Gynæcological Surgeon, Sydney Hospital.

As the following case was rare, as well as interesting, I thought it would be well to have it recorded:

Mrs. H. was sent to me by Sir Jarvie Hood in January, 1921, with the request that I might attend her during her confinement.

She was thirty-one years of age and her last menstrual period had commenced on November 20, 1920, and lasted five days. Nine years before she had had a miscarriage at three months and a Cæsarean section had been performed in Melbourne for *placenta prævia* at the eighth month nearly eight years ago.

On examination she appeared thin and of nervous temperament. The abdominal scar was good. The patient was pregnant, the uterus being of the size of about a two months' gestation. The presentation eventually turned out to be breech and the patient progressed in a satisfactory manner until August 7, 1921, when she had a severe attack of vomiting. She took oil that evening and was fairly well during the following day, but towards evening of that day (August 8) the patient noticed a swelling appearing in the umbilical region, accompanied by great pain. The swelling and pain were recurrent and gradually worked towards the right side of the abdomen.

I was sent for on the morning of August 9 and found the patient in bed; but no swelling was noticeable, other than the enlarged uterus. However, in a few moments a swelling appeared at McBurney's point, gradually increasing in size until the hand was just able to cover it.

During the period of swelling the patient complained of great pain in the side. The swelling gradually disappeared and the pain subsided. After a lapse of five minutes the swelling reappeared, only to disappear after a minute or two. It was noticed that the uterus was hard while the swelling was evident.

The abdominal wall was very thin and the swelling was quite easily felt and to the touch seemed to contain fluid. The abdominal wall moved freely over the swelling and as the swelling decreased in size it became softer. Following it down, I could pass my two fingers into an opening in the uterus through which the swelling had disappeared.

As it was evident that the membranes were protruding through an hernial opening in the uterus and that rupture of the membranes might take place at any moment, arrangements were made for her removal to a hospital.

The intermittent pains, accompanied by the swelling, continued throughout the day and rupture occurred at 3.45 p.m..

Through some misunderstanding the patient had not been admitted to hospital. She was then in great pain, but showed no signs of shock. Pulse was good. The abdomen was tender and the uterus still periodically contracting. The patient was immediately removed to hospital.

The abdomen was opened; it contained *liquor amnii* and, on rotating the uterus to the mid-line, the opening was seen in the line of the old Cæsarean scar. It was about the size of a five-shilling piece, had thick edges, which were smooth and showed no signs of recent tearing. The torn membranes were protruding through the opening and the external surface of the right knee-joint was noticed presenting at the opening.

Incisions were made downward and upward from the opening and the child, a male of 3.6 kilograms, was quickly removed. The cord was pulsating, but the child was not inclined to breathe.

The mother had been given a hypodermic injection of 0.015 gramme of morphine previously. The child soon came round.

The edges of the opening were freshened and the whole incision sutured with chromic gut. The abdomen was dry cleaned.

Convalescence was uneventful.

Reviews.

INFECTIVE DISEASES.

In no branches of medicine were greater advances made during the recent war than in those which deal with the prevention of communicable diseases. Consequently, it is not surprising that, since the war, numerous new textbooks have appeared which deal with this subject from different angles. The writer of the most recent work brings unusual qualifications to his task.[1] His past experience as a naval surgeon serving in various parts of the world gives him a first-hand acquaintance wth a large variety of diseases and local conditions; as a lecturer in hygiene and instructor in military surgery and in medical zoology at Georgetown University he has been in touch with other aspects of his subject. He has, in addition, a clear, concise style and the power of summarizing opinions and methods. The result is a work which most successfully fulfils the objects with which the author set out, namely, to place in the hands of sanitarians, naval and military surgeons and general practitioners a handbook which will give easy access to the most up-to-date knowledge on any practical topic to which he may desire to refer.

The plan of the book enables any practitioner to gain with ease a general idea of present views on the causation and means of spread of communicable diseases. The first chapter, which deals with causation only, refers briefly to predisposing causes and plunges into a more ample discussion of the biological causes than is usually met with in handbooks of this type. This includes a very convenient summarized classification of the animal and vegetable parasites and the conveyers of other parasites. The chapters on dissemination and on general prophylaxis are particularly clear and good, while those on infection and immunity and disinfection, although highly condensed, give the essential information needed by the ordinary practitioner or administrative officer. Then follow chapters dealing separately with the special aspects of sanitation required in armies, navies, railways, municipalities, rural districts, schools, prisons, hospitals and industries. This list will show the wide range covered by the author; these chapters contain a mass of practical information that is not available in ordinary text-books. These sections increase the value of the book to administrative officers. In addition, the author draws particular attention in his preface to a new departure he makes in apportioning chapters to the subjects of sanitation in the tropics and polar regions and to the measures necessary in great emergencies, such as follow earthquakes and fires, as occurred in San Francisco several years ago.

The second part of the work deals with individual diseases. The author follows with advantage the plan now generally adopted by American writers of grouping these diseases under separate headings, according as they are spread by nose and throat discharges, fæcal or genital discharges, wounds, insects and so on. Each disease is again dealt with under headings which include, amongst others, definition, geographical distribution, infecting agent, mode of dissemination, incubation and infective periods. Under the prophylaxis of each disease he inserts after the general measures necessary those specially applicable in military and naval administration.

For these reasons the book well deserves a place in every medical practitioner's library. Two minor points mar the general excellence of the book. The first one is seen when the reader turns to consult it for special Aus-

[1] "Hygiene of Communicable Diseases: A Handbook for Sanitarians, Medical Officers of the Army and Navy and General Practitioners," by Francis M. Munson, M.D.; 1920. New York: Paul B. Hoeber; Demy 8vo., pp. 793, with 36 illustrations. Price: $5.50.

tralian information. For an author who, in his preface, confesses to have consulted standard works and periodicals in English and to have utilized much personal information gained from different sanitarians, not only are the Australian references lamentably scanty, but, where they occur, they suggest imperfect acquaintance with actual conditions. The list of individual diseases dealt with is very complete, yet there is not even a passing reference to bilharziosis, in the problems of which we have been particularly interested during the past few years. We have, unfortunately, become accustomed to American authors writing, as this one does, of "Sidney," but it comes as a shock to learn that scarlet fever has never firmly established itself in Australian cities. Hookworm is mentioned as existing in the Pacific Islands and particularly in Samoa, yet there is no reference to its presence in Australia, although £200,000 a year is at present being spent in an attempt to eradicate it from Queensland. There are lengthy references to dengue in America, but Australia is only included in a list of six countries where epidemics occur. Minor inaccuracies like these would not call for comment but for the generally high standard of accuracy with regard to matters outside Australia.

The other blemish lies in a three-page addendum to the section on influenza. This deals with the recent pandemic; the author quotes, with approval, at length the hypothesis that this was not influenza, but a recrudescence of the last epidemic of pneumonic plague which occurred in Manchuria in 1910-11, the causal organism of which lay latent in a non-virulent form in the Chinese coolies imported to Europe during the war and "acquiring new virulence and somewhat different forms when transmitted by the Chinese carriers to German soldiers" started the European epidemic. We cannot help feeling that here, again, the author has been misled by an unconscious bias to a fellow-American military surgeon, whom he cites as the author of this particular form of an oft-repeated hypothesis.

NORMAL LABOUR.

In "An Atlas of Normal Labour,"[1] Dr. G. Drummond Robinson endeavours to illustrate the processes of parturition by a series of photographs and drawings. The latter serve their purpose to a limited extent only, being somewhat crude in execution and actually faulty in places. In the left occipito-anterior presentation depicted the head is not shown in apposition to the lower uterine segment until the *os* is fully dilated and the membranes ruptured. This does away with the normal ball-valve action of the vertex and allows communication between the bag of membranes and the general amniotic cavity, causing an abnormally shaped bag of membranes. The head is shown floating well above the inlet, engagement at the brim is depicted only after full dilation of the *os* and rupture of the membranes, whereas normally the presenting part is engaged before the onset of labour.

Although a malformed bag of membranes form in breech presentations, as a result of the irregularity of the breech, some apposition between the breech and lower uterine segment is normally present. This is not shown, nor is the breech engaged until well after full dilation of the *os* and rupture of the membranes. Only Schultze's method of separation and expulsion of the placenta and membranes by inversion is shown, no mention being made of Duncan's description of the third stage.

Apart from these exceptions, the drawings give a good idea of the progress of labour in normal breech and vertex presentations.

In the series of photographs showing a breech delivery, no effort is made to follow the old teaching to cover the part already born with a warm cloth. No doubt the author believes that cold has no reflex influence on respiration, following Ahlfeld, who considered that he had proved this by delivering children into warm water when respiration was established without difficulty. The effect of cold on respiration can be demonstrated under a cold shower. Cold air may not always act as a stimulus, but it sometimes might do so with disastrous results and it would be preferable to keep to the old teaching.

Otherwise the photographs are excellent and demonstrate that moving pictures of obstetrical and surgical subjects could be made a very serious part of university teaching, as a preliminary to the actual clinical work, which, of course, nothing can replace.

[1] "An Atlas of Normal Labour, with an Appendix Showing Sylvester's and Schultze's Methods of Artificial Respiration," by G. Drummond Robinson, M.D., B.S., F.R.C.P.; 1921. London: William Heinemann (Medical Books), Ltd.; Crown 4to., pp. 104, illustrated by 405 illustrations from photographs and drawings. Price: 25s. net.

Analytical Department.

ARNOTT'S BISCUITS.

When the Analytical Department of The Medical Journal of Australia was being established, a series of standards for the various classes of infants', invalids' and other foods was drawn up with the collaboration of experts on which the inspection and judgement of these foods would be based. Much careful thought was expended in this preliminary work. It was then determined that the requirements of the Journal in respect to biscuits should be: (*i.*) that scrupulous cleanliness be observed throughout the whole process of manufacture; (*ii.*) that only sound, pure ingredients be used; (*iii.*) that handling be reduced to a minimum; (*iv.*) that the flour used in the manufacture conform to the standards provided in the regulations of the *Pure Foods Act* of the State in which the biscuits are manufactured and sold; (*v.*) that no substance be added that might be deleterious to health; (*vi.*) that the nutritive value of the various forms of biscuits be considerable.

It will be understood that biscuits, being substances containing a large proportion of starch, are unsuitable in all cases for infants under six months of age and that they should be given with a sparing hand, if at all, during the second half of the first and the whole of the second year of life. Essentially biscuits may be regarded as a suitable food for children and adults. No expression of opinion can be given concerning the digestibility of any given kind of biscuit, since the only known test is direct experiment and the power of digesting a mixture of starches, proteins and fats varies with almost each individual.

The Factory Buildings.

A visit to the factory of William Arnott, Limited, at Homebush, in the neighbourhood of Sydney, has recently been undertaken for us by a special inspector. The factory consists of a group of brick buildings, some of which have been erected at a later period than others. Each building is placed at a sufficient distance from the next one to insure adequate lighting. There is free access of direct sunlight to the intervening spaces, which have been levelled and well drained. The spaces are clean and dry. The buildings are of large area and are well lit. They are provided with cement floors. Our inspector reports that all parts of the buildings were found by him to exhibit an attractive standard of cleanliness.

Hygiene of the Factory.

The materials from which the biscuits are made are mixed in machines similar to those used in the preparation of dough. The mixture stands in troughs to ripen before further treatment. The machines had been in use shortly before the inspection and all the mixtures had been prepared previously. The machines had been carefully scraped and were quite clean. There were no scraps of dough about the corners or angles. The machines were free from dirt due to oil and flour. The doughs were lying in the troughs, which were all free from signs of old dough. There was no flour on the floor around the machines and the walls were clean and not bespattered with dough.

The dough is rolled into sheets by means of special machines and these sheets are divided by metal stamps into pieces of the required size and shape. The shaped portions of dough are separated from the trimmings by various ingenious devices. The cut pieces then pass on trays through the ovens. The time occupied in this passage is determined by the temperature of the oven. Many designs of oven are employed at the factory, but in all

cases the heating is from below. The whole of the machinery used in these operations was found to be scrupulously clean. Some scores of different machines were seen during the inspection, but in no case were there noted any signs of carelessness in the attention paid to cleansing the machines. The high standard of hygiene noticeable in all parts of the factory is evidence of the good organization of the concern and the proper training of the numerous employees.

Some biscuits are not ready for packing as soon as they have been baked. They have to be coated with some kind of paste or made into a form of sandwich. Machinery is being introduced to diminish handling by employees as far as is possible in these operations. So far no machine has been devised for some of the later operations. A comparison between the new arrangement with the use of machines and the older method by manual labour shows that much handling is avoided in the former. Machines of this type demand delicate adjustment.

The biscuits are packed in tins or in paper parcels. This is largely done by young women. While some effort has been made to lessen contact with hands, the packing of biscuits still remains a process carried out manually. Rules in respect to washing of hands and to general cleanliness are relied on to provide against any contamination of the biscuits.

Some of the biscuits are packed into new tins. For other biscuits used tins, returned to the factory, are employed. The repair and cleaning of these used tins occupies the energies of a whole department of the factory. Every tin is thoroughly washed before being passed through hot water and through hot air to dry it. Our inspector is satisfied that the precautions taken in regard to the re-used tins are ample.

It is not the custom in this factory for the employees, who are in the majority young men and women, to wear special overalls and caps while at work. The employees, however, appeared to be clean and their clothing was quite clean. A general supervision insures that old, soiled clothing is not worn by any employee who has any direct contact with the biscuits or with the materials from which they are made.

The Ingredients.

The fruits used, such as dates, sultanas, currants, raisins and the like are cleaned in a special machine. The sugar is ground in a special mill. The fats, of which a large quantity is employed in the manufacture of biscuits, are tested in respect to odour and taste. The supply of fats, including lard, butter, margarine and dripping, has been the subject of particular control. It has not been regarded as necessary to institute routine chemical investigation, since it is the practice in this factory to buy only such quantities of fats as can be consumed in a short period of time. Cold storage is utilized to diminish any change in the fats when they are not used immediately.

The condition of the large quantities of eggs required is regulated by cold storage. A series of samples of flour was selected from the large stocks.

Results of Analysis.

Seven specimens of flour were subjected to analysis. These samples were satisfactory as far as colour and general appearance is concerned. No evidence of adulteration was detected on miscroscopical examination. Determinations of the amount of water and of nitrogen yielded the following results:

Sample.	Water.	Nitrogen.
A	10.02%	1.7%
B	10.10%	1.9%
C	10.45%	1.77%
D	10.20%	1.66%
E	11.80%	1.71%
F	11.45%	1.75%
G	12.38%	1.45%

As sample "G" contained a relatively low nitrogen content, it was subjected to further tests. The sugar present, estimated as glucose, amounted to 1.2%. The acidity of 100 grammes was that equivalent to 1.4 c.cm. of decinormal sodium hydrate, with phenolphthalein as indicator. It was concluded that this sample of flour had been kept either as grain or as flour for some months.

An analysis was also made of a specimen of ground whole wheat. Its aqueous content was 12.69% and its nitrogen content 1.75%.

A series of analyses was further carried out of "Sao" biscuits and of "Milk Arrowroot" biscuits, purchased in the open market. Special attention was paid to the estimation of the fats present. After a number of trial analyses, the figures obtained by Meig's method were accepted as satisfactory.

"Sao" biscuits yielded the following figures:

Moisture	6.5%
Protein	6.8%
Fat	13.0%
Ash	1.0%
Carbo-hydrates (by difference)	72.7%

"Milk Arrowroot" biscuits gave the following results:

Moisture	4.1%
Protein	6.25%
Fat	23.0%
Ash	1.3%
Carbo-hydrates (by difference)	65.3%

From these analyses it will be evident that the biscuits manufactured by William Arnott, Limited, have been made from flour conforming with the standard laid down in the regulations of the *Pure Foods Act* of New South Wales. We can recommend these biscuits as articles of diet of high nutrient value for children (not infants) and adults. They are carefully prepared and the standard of cleanliness in the factory is of a high order. The protein, fat and carbohydrate contents of "Milk Arrowroot" biscuits particularly are considerable.

W. WATSON & SONS, LIMITED.

IN the year 1914 a branch of the London firm of W. Watson & Sons, manufacturers of optical instruments, was established in Melbourne. This business was incorporated under the *Companies Act* of Victoria, with a capital of £10,000. The company traded successfully in the sale of microscopes and scientific apparatus used in medical practice. A special study was made of X-ray plant and valuable agencies were acquired. In 1919 the company was reformed with a capital of £20,000. Its headquarters were transferred to Sydney. Notwithstanding the fact that the business was restricted to the sale of imported goods, the profits in each year since its foundation have amounted to at least 10% of the paid-up capital. In 1920 and 1921, the profits have been 24% and 25% respectively.

The managers have now determined to develope the business, by the establishment of a factory in Victoria for the making of X-ray and electro-medical apparatus. Experts trained in this work have been secured as members of the staff and an attempt will be made to institute an Australian trade which may, in the course of time, compete successfully with the overseas trade. The firm will continue to hold the agencies for W. Watson & Sons' microscopes and for the X-ray apparatus of the Victor Corporation and of the General Electric Company of America.

A prospectus of the reformed company, together with the Memorandum of Association and Articles, has been issued. The company is issuing 15,000 first cumulative preference shares of £1 each, to bear interest at the rate of 10% *per annum*. It is suggested that the business of this company is primarily a concern of the medical profession. It would therefore appear that if the greater number of these preference shares were taken up by members of the medical profession, the control of the company would pass to some extent into the hands of those who are the chief users of the articles manufactured and sold. Information in regard to the issue of the new shares can be obtained from the Secretary of the company, in Sydney (15, Castlereagh Street), in Melbourne (78, Swanston Street) and in Brisbane (357, Queen Street). Inquiries may also be addressed to the Editor of the JOURNAL.

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Hospital Standardization.

In each State of Australia there are two or more large public hospitals, while numerous smaller general hospitals and a considerable number of privately endowed hospitals keep their doors open to the less well-to-do members of the community. The management of these hospitals differs in the different States and in some instances it is not uniform throughout one State. The method of election of the members of the medical staff, both honorary and resident, varies considerably; even the control of the medical arrangements is not the same in all the hospitals. In brief, the only element common to all is the provision, free of all cost, of medical and nursing attendance to the patients. The term "public hospital" is used to signify an institution where any person in need of expert medical or surgical treatment, who is unable to pay for this treatment in a private institution, can obtain admission. We would therefore include in the definition those admirable establishments owned by the Sisters of Charity and managed by this order. Up to the present the medical profession in the Commonwealth has adhered to the principle that in institutions where the visiting members of the staff render gratuitous service, inability to pay for the necessary attendance and suitability from a medical point of view are the two conditions governing admission. We are unaware of any indication of a change of attitude toward this matter on the part of the representative organization of the profession.

The members of the medical profession who render service at public hospitals, bear a responsibility to the patients in the institutions, to the voluntary subscribers to the funds of the hospitals and to the general community which supports the hospitals through the taxes paid to the State exchequer. This responsibility is enhanced by the fact that the service is honorary and is rendered to the poor. It is a proud boast of the medical profession throughout the whole of the British Empire that its best endeavours and its greatest skill is given willingly, without recompense, to hospital patients. The public has a right to know that none but the most able are appointed to the staffs of the hospitals and that the work is conducted in a manner that will stand critical examination in the full light of day. At the present time no guarantee is given to the public in either direction. From time to time appointments are made without a public invitation to the whole profession for applications from candidates to fill existing vacancies. Often the appointments are made by a committee whose members are not competent judges of medical or surgical ability. It would even appear as if favour sometimes determines an appointment. In the next place, once a practitioner has been elected to the visiting staff of a hospital, no control is exercised to guarantee that his services are assiduous or efficient. There are no means in existence in Australia for the revision of the appointments in the light of the value of the services rendered. It is true that from the majority of the large hospitals an annual report is issued, purporting to be a summary of the year's work. These reports are nearly always stereotyped, contain little or no information concerning the manner in which the individual members of the staff have discharged their obligations to their patients and to the public and serve solely as sentimental appeals for further voluntary contributions. That the work is in fact well performed in the majority of instances is due to the high sense of honour of the members of the staffs. Nevertheless, the public can learn nothing of the relative proportions of failures to successes under the conditions obtaining. Without disparagement to the expert surgeons and physicians holding office at our great public hospitals, it may be said that the whole system on which the professional work is conducted in these institutions nurtures isolation of the individual members of the staffs and consequently prevents friendly criticism, which is the best incentive to improvement in work.

We have called attention on several occasions in the past to the movement in America known as hospital standardization. In its essence it is a plan to subject the work of the visiting medical officer

to careful revision and control and to require that each medical officer shall either justify the confidence imposed in him or make room for someone more efficient or more conscientious. In the first place, each medical officer is required to prepare and submit to a central committee regular reports on his hospital work, frankly disclosing his failures as well as his successes. He is asked to give in tabular form the number of diagnoses made before operation, the number of mistakes disclosed by operation and by autopsy, the number of operations undertaken without a provisional diagnosis, the number of deaths among his patients, grouped both in accordance with the pathological process and with the treatment, and so on. It has been found that it is possible to adopt from these replies a general standard of permissible failures. If a surgeon or physician continues to be responsible for an excess of failures, he is requested to tender his resignation to the hospital authorities. The members of the staffs of the hospitals joining in the scheme are required to hold at least one meeting each month, when mistakes and difficulties are freely confessed and discussed. These informal consultations and discussions are held to be fertile in improving the standard of practice. It is unnecessary to recapitulate the minute details of the American programme, since it would not be applicable in all particulars to Australian conditions.

There is need for the adoption of a modified form of hospital standardization in Australia. The initiation would have to be a voluntary one. A few of the senior members of the profession could start the ball rolling. Invitations would be sent to the members of the medical staffs of the large public hospitals to join in the endeavour to raise the standard of hospital practice. As a preliminary, the members of the staffs would need to induce the boards of management of their institutions to guarantee that no appointment would be made without public advertisement of the vacancy and without guidance from a committee of experts in regard to the apparent merits of the several candidates. In the next place, each member would be required to undertake to incorporate in his regular reports to the central committee "the truth, the whole truth and nothing but the truth." In every instance the data on which the reports are compiled, should be entered in unambiguous language on the case sheets. In the course of time surgeons and physicians would become accustomed to keep proper records of the illness of their patients, written in correct, unambiguous language, open for all to read. These records would act as checks to the imagination and would enable resident medical officers and students to learn day by day the deliberate opinions formed by the visiting officer and his interpretation of physical and chemical facts. The keeping of these records, the submission of regular reports and the discussion of failures and their causes would undoubtedly have a salubrious effect on hospital practice. They would be all the more valuable if the continuance of service depended on the maintenance of a reasonably high standard of results. We commend the conception of hospital standardization to the medical officers of our great public hospitals.

THE CONTROL OF CHILD-BIRTH.

Dr. Fourness Barrington, the President of the New South Wales Branch, has performed a very valuable service, not only to his own State, but also to the whole of the Commonwealth, by having initiated a vigorous campaign for the reduction of invalidity and death in child-birth and of pre-natal and post-natal death of infants. This campaign was started with his presidential address in the Section of Obstetrics and Gynæcology of the Australasian Medical Congress, Brisbane, 1920, and has been consistently pursued ever since. He has guided the Council over which he presides, to use its influence with the State Minister of Public Health in regard to the introduction of legislation for the registration and supervision of midwives.

In England and Wales the mortality of women during pregnancy and child-birth in 1920 was 4.3 per thousand births. In Australia a relatively larger number of women die as a result of pregnancy or child-birth. In England and Wales the infantile mortality has been reduced from 110 per thousand births in 1915 to 80 in 1920. In the Commonwealth it was 69.2 per thousand births in 1919. In England and Wales still-births in 1919 represented about 3% of the number of live births, while in Saint Maryle-

bone Municipality it was as high as 12%. The frequency of still-birth in Australia is unknown. These figures should suffice to justify the adoption of energetic measures to combat the enormous waste. It is unnecessary to marshal further facts to prove that the future of Australia depends largely on the conservation of infant life and of the lives of young women.

In his excellent second annual report to Parliament, Sir George Newman, Chief Medical Officer of the Ministry of Health, suggests that a complete maternity and child-welfare scheme would include the following eight activities: (*i.*) Ante-natal care and nutrition of the mother; (*ii.*) an adequate medical, midwifery and nursing service for child-birth; (*iii.*) the notification of births and still-births; (*iv.*) domestic aid before the time of and after child-birth (including maternity benefit); (*v.*) the provision of maternity centres for ante-natal and post-natal supervision; (*vi.*) the provision for certain cases of maternity home and hospital accommodation; (*vii.*) the establishment of infant welfare centres (for consultations, home visiting and the assistance of the mother in the upbringing of her children); (*viii.*) the establishment of infant treatment centres and infant homes and hospitals. Further, in his report, Sir George Newman pleads for improvement in the practice of midwifery, for the provision of clean and sterile dressings, etc., for more maternity hospital accommodation and for a realization of the great responsibility on the part of medical practitioners and midwives. This document and the second annual report of the Ministry for Health for the year 1920-1921 contain information concerning the machinery adapted in the past to the needs of this problem and concerning the results of the application of this machinery.

In Australia, a certain amount of new legislation is needed in the interests of mothers and of infants. This legislation is essential as the basis of the scheme. But it is as useless to rely on legislation alone as it is to endeavour to work the scheme on an entirely voluntary basis. If suitable legislation can be obtained, it is necessary, nay, it is imperative, to have the provisions properly carried into effect. We have Acts of Parliament in all the States aiming at the control of venereal diseases, but nowhere, save in Western Australia, are all the provisions enforced, while in two States the Acts are practically dead letters. The important measures in the campaign for the prevention of maternal and infantile invalidity and mortality are improved education of obstetricians and midwives and an adequate supervision of midwifery practice. In the year 1920 there died in England and Wales 1,730 women of puerperal fever. Who is responsible for these preventible deaths? The public must be taught that every infection occurring in a normal labour is a crime. Ideally both midwives and medical practitioners should be suspended from practice for a period of time increasing with each repetition, when their lying-in patients become infected. A more rigorous punishment should be inflicted when the infection terminates fatally.

In England and Wales the number of births registered during the year 1920 was 957,782. The Ministry of Health distributed during the year on maternity and child welfare to the local authorities and voluntary societies grants amounting to the sum of £873,850. To this sum was added moneys collected by the local authorities and the voluntary agencies. In round figures, even the limited scheme in force in England and Wales costs over £1 per birth. In Australia there is the five pounds baby bonus. It should suffice to cover all that is required in an ideal scheme. Perhaps our legislators will for once relinquish the transparent habit of vote-catching stunts and will do something serious for the welfare of the future Australian race.

ARTERIAL AND CAPILLARY BLOOD PRESSURE.

Physicians of to-day are endeavouring to measure the vital functions of the circulatory apparatus in disturbances of the blood vessels by the determination of the blood pressure within the main arteries, both during systole and diastole. The physiological significance of these pressures is ignored in the majority of instances, in that an arbitrary level of systolic pressure is often fixed, above which a danger zone is supposed to lie. The association between dangerous degrees of arterio-sclerosis and a high arterial blood pressure has long been evident. In consequence of this obvious phenomenon, the clinician has neglected to take into consideration factors other than the rigidity of the arterial wall and the resulting compression of the mass of blood thrown into the main unyielding channels. During systole the pressure within the arteries is produced

by the force of the cardiac muscle, by the viscosity of the blood, by the friction of the moving blood through the arteries, by the extra-vascular pressure, by the pressure exerted by the vascular wall on the column of blood and by the resistance to the onflow in the small arteries, arterioles and capillaries. During diastole, the pressure registered in the main arteries represents the balance between the maintained external and vascular pressure, that is, the tissue fluid pressure added to the vascular tone and the moving column of fluid. The complexity of the resultant pressure, even when regarded from these few component factors, renders it difficult to convert it into terms of physical measurement. To endeavour to ascertain the state of the circulatory apparatus from the measurements in millimetres of mercury of the arterial blood pressure is necessarily futile. It is true that persistently high readings indicate a serious, perhaps a hopeless, degree of disturbance. But the registration of a raised blood pressure, as every careful clinician knows, does not always disclose the extent of the damage in the vessels.

The heart muscle responds to the call for increased energy when the peripheral circulation is obstructed. It may be assumed that the amount of energy put forward by the heart muscle varies very considerably in health. It is obviously determined by the amount of force needed to propel the blood through the arterioles and capillaries. The peripheral circulation may be obstructed by changes in the tissues, by the state of the arterioles, by changes in the viscosity of the blood and by actual obstruction within the capillaries. If these factors be recognized, it must be conceded that the assessment of the condition of the circulatory apparatus should be based on the force of the heart muscle contraction, on the pressure within the arteries and on the rate of flow through the capillaries.

Professor Leonard Hill and Dr. James McQueen have endeavoured to measure the blood pressure within the capillaries by means of a modification of the Roy and Brown apparatus. From these measurements, which have been carried out with extreme care and peculiar attention to experimental detail, they put forward some interesting ideas concerning the subject under discussion.[1] In the first place, they found that a momentary arrest in the flow of blood through the capillaries in the web of a frog can be effected by the application of a pressure of from 3 mm. to 5 mm. of mercury. This involves the neutralization of kinetic as well as potential energy of the blood stream. In the human finger, they found that by increasing the force of a jet of water playing on the skin behind the nail, a pressure could be determined just strong enough to produce blanching. The result of increasing the viscosity of the blood, while the force and rate of the heart beat and the calibre of the arterioles, capillaries and venules are constant, is a diminution of rate of capillary flow. This diminished flow can be measured by the rise in the lateral pressure on the contained blood. The actual measurements reveal that the capillary pressure is very low. The older endeavours to measure capillary pressure were erroneous, in that they actually represented the pressure within the arterioles. In the course of a controversy in the correspondence columns of the *British Medical Journal* during the months of June and July on the physics of the blood pressure within the capillaries, Professor Leonard Hill and Dr. McQueen have shown quite clearly that there is nothing surprising in the pressure determinations made by them, since the blood pressure is known to diminish from the arteries, through the arterioles, capillaries and venules into the veins. They claim that the kinetic energy of the flow in the capillaries is correlated exactly to the frictional resistance of the blood within the capillaries. It would seem from their experiments that the capillary wall does not tend to collapse when the capillary is emptied of blood. The blood pressure is scarcely higher than the pressure exerted from the tissues on to the capillaries. The demands for extra blood in any capillary area in health are met without great increases in the kinetic energy of the flow and without any large additional work on the part of the heart. Under certain conditions of altered circulatory function, an increased amount of force is required of the heart and the blood pressure within the arteries may be raised in order to maintain a normal rate of flow through the capillaries. They deny that the capillary blood pressure is raised as a result of a high arterial blood pressure. They therefore assume that a deliberate lowering of the blood pressure when this has been raised to maintain the capillary flow, might be followed by very serious consequences.

It is well known that in health the blood pressure within the main arteries does not fall below a level, usually spoken of as the critical level. Under pathological conditions a sinking of the arterial blood pressure below this level involves a reduction of the rate of capillary flow. The slowing of the blood stream through the capillaries of the heart must lead to a diminution of the supply of energy of the heart muscle. Professor Leonard Hill and Dr. James McQueen claim that in shock this factor is always present. It will be remembered that the work of Cannon, Crile, Bayliss and others proved that in shock the amount of blood in actual circulation is diminished, the person bleeding into his own capillaries. It has been suggested by MacLeod that reciprocal innervation, by which vaso-constriction in one area is compensated by vaso-dilation in another, fails to act in shock. Professor Leonard Hill and Dr. James McQueen point out that vaso-dilation in itself need not lead to a decrease in the kinetic energy of the blood flow in the capillaries. They argue that in shock the arterial pressures are lowered and the arterioles are constricted. Constriction of the arterioles inevitably leads to a considerable diminution of the kinetic energy of the blood flow in the capillaries. They offer in this way an explanation, based on actual measurements, of the blood stasis in the capillaries in shock. It is unnecessary in this place to follow their arguments concerning the direct anastomotic paths between the arterioles and the venules. These argu-

[1] *The Lancet*, July 9, 1921.

ments are complementary and may be considered by themselves. Whether the explanation of shock put forward is correct or not, the significance of the rate and of the kinetic energy of the flow in the capillaries must be taken into account if we would assess the true value of circulatory disturbances associated with alterations in arterial blood pressure.

PLAIN SPEAKING TO THE DYING.

There is no maudlin sentimentalism about Dr. J. Norman Glaister. He believes that all should meet the inevitable without flinching, since death is no more terrible than sleep and no less natural than birth. To struggle against the icy hands of the fell sergeant is to deny the primæval claims of kindly Mother Earth. Struggle is futile, unwise and ungrateful. Our attitude towards death should be governed by common sense. The normal physical condition of a man of 150 years is one of "peaceful slumber in a churchyard," not of a frail body lit with the flicker of a feeble mind. All of which shows that Dr. Glaister is no mean philosopher. He is one of a great company of men who have tackled the final problem and found a solution. His paper on the management of death calls up memories of the days when the facile style of Cicero's *"De Senectute,"* put into the mouth of old Cato Major, appealed to our tender ears; when, later still, we read the "Apology" of Socrates; and, still later, when we were introduced to the calm meditations of the Emperor Marcus Aurelius Antoninus. For the spirit of Dr. Glaister's paper[1] is not less admirable than that of these three. It is, perhaps, a little more original. Lacking the literary and historical appeal of the works of the ancients, it arrests attention by its practical treatment of the problems which confront every doctor in the routine of his daily work.

Dr. Glaister studies the mental state of a patient dying from inoperable cancer. His friends know he is dying and the patient knows he is not getting well. He is not informed that he is dying. A "conspiracy of silence" is directed against him, varied with a conversation which is artificial and three parts bluff. Companionship, the right of every man, is denied him in the last critical days, when he most needs it. He becomes a lonely figure, wandering unaccompanied on the road to death. Dr. Glaister would alter all this. He would tell the patient the blunt truth, revealing all and concealing nothing. He insists that the patient, although rudely shocked at first, will shortly come to face the inevitable with equanimity. He will be able to talk frankly with his friends, who will now converse with him sympathetically and without reservation. His dearest friends will be able to accompany him "as far as possible" on the long last journey. Dr. Glaister records the case of a woman dying from inoperable cancer of the breast. He asked her to face the facts (admittedly known to her) that she had cancer, that nearly all people with cancer die and that it was probable that she would die as others had done. She was deeply grieved and refused to see him. She also viewed the matron and nurse with suspicion and dislike. Later she became reconciled to the doctor and was persuaded to confide in him the subjects of her dreams. The majority of these he interpreted as references to her coming death, which was the one great thought in her mind. Her dislike of the matron and nurse finally disappeared. She became more composed and died in her sleep.

The author's argument is not convincing. In the one case he quotes, the brutal truth made the woman morbidly suspicious of her nursing attendants and for a considerable time very unhappy. Towards the end she became more reconciled, but, at the same time, her intelligence was being dulled by her advancing disease. Few people die with the machinery of mind in full working. Sensations become blunted and the intellect either burns faintly or is quenched in unconsciousness. On the whole, it is well that it is so. Much as men may boast of their ability to meet death with head unbowed, many would prefer not to be acutely sensitive of the passing. Death on a sick bed, after a tedious illness, is stripped of all poetry. To the average man, it is stark and fearful. Death may seem a natural thing to the philosopher, but the average man clings dearly to life. The majority of us have views on the subject not dissimilar to those of Charles Lamb. Our household gods are not uprooted without blood.

Physicians do not favour the advice to tell the plain truth to the dying. To do so would be in many instances disastrous. Some men of heroic mould are fit to hear the truth and their physical condition is in no way wounded by the knowledge. The great majority, however, are not fitted and do not expect to be told the worst. The dying man who asks the doctor whether there is any chance of life, gains comfort from a kindly assurance. To tell him bluntly that he will die is to wound his higher susceptibilities and to precipitate him into an abyss of despair which may kill him. The good physician tries to elevate the spirits of his patient, for he knows from his experience that hope is the generous handmaid of medicine. He knows also the fallibility of medical knowledge and skill. The most hopeless prognosis is occasionally falsified by results. There is no absolute certainty. Unexpected recoveries from intense attacks of pneumonia and other acute diseases are not unknown and even in advanced chronic infective processes surprising recoveries are on record. Not a few men have recovered, temporarily at least, from advanced pulmonary tuberculosis, when the ebb of life seemed perilously low. The diagnosis of inoperable cancer of the stomach, made after laparotomy, followed by a gloomy prognosis, has had to be changed occasionally into one of gastric ulcer. The patient failed to die! A wise medical adviser will choose his man and tell him as much as is good for him and no more. He will, however, hide nothing from the patient's immediate friends, who, in most instances, are alone fit to hear the apparent truth. Dr. Glaister's heroic method should be reserved for the visionary future, when the moral courage of man may approximate to that of the gods.

[1] *The Lancet*, August 6, 1921.

Abstracts from Current Medical Literature.

PATHOLOGY.

(168) The Sizes of Red Blood Cells in Emphysema.

CECIL PRICE-JONES (*Journal of Pathology and Bacteriology*, July, 1921) records the results of his recent investigations at the University College Hospital Medical School, London. He finds that the red blood cells of patients suffering from emphysema are larger than those of healthy persons. Blood examinations were made of 22 patients suffering from emphysema, of whom 16 were males and 6 females. Their ages ranged from 35 to 100 years, but were chiefly over 70 years. Twenty healthy persons were examined as controls, their ages ranging from 19 to 90 years. The average red cell diameters of the patients suffering from emphysema ranged from 7.33 μ to 8.17 μ and the mean diameter value for the 22 patients was 7.69 μ. The average red cell diameters of the healthy persons ranged from 6.96 μ to 7.48 μ and the mean diameter value was 7.24 μ. This difference of 0.45 μ must be regarded as a significant difference. There is no correlation between the sizes of the red cells and the age of the individual. The diurnal variation in the sizes of red cells which occurs in healthy persons, also occurs in emphysema patients. The large red cells of emphysema are quite as mobile as healthy red cells. If impairment of the respiratory exchange is the cause of the enlarged red cells in emphysema, it would seem likely that similar increase in red cell diameters should be found in cases of circulatory failure. However, in a series of 15 patients suffering from heart disease, the mean diameter value of the red cells was found to be not significantly different from the mean diameter value of the red cells in a series of 20 healthy controls.

(169) Russell's Fuchsin Bodies.

GUTHRIE MCCONNELL AND ALPHONSE LANG (*Journal of Medical Research*, November, 1920-January, 1921) record their results of a study of 100 specimens of dental granulomata. Dental abscesses were not examined. Of the specimens, 86 contained fuchsin bodies in greater or less number. They were found chiefly among the plasma cells and to a less degree in the interstices of the enclosing connective tissue capsule. They were not found in the masses of polymorpho-nuclear leucocytes, nor, with but few exceptions, in the areas of dense fibrous tissue. The vast majority were distinctly spherical in shape, whether occurring singly, in small groups or in large "mulberry" clusters. The variations in size were quite extreme. Some were merely minute granules. Others were spheres several times the diameter of a red corpuscle. The authors consider that these bodies are the result of degenerative changes occurring in the cell protoplasm, but not in the nucleus. The type most commonly affected is the plasma cell, but any other variety of tissue cell may undergo a similar degeneration. Further, the authors are of the opinion that the red blood cells are not concerned in their formation. This conclusion is based upon the fact that in the microscopical examination no relation could be found between the blood cells or the blood pigment and the fuchsin bodies. It is also based on the observation that by the Gram method of staining these bodies are very strongly positive, which is not the case with the red blood cells, nor with the products derived from their disintegration.

(170) Bacteriolytic Substances of Leucocytes.

M. GENGOU (*Bulletin de l'Académie Royale de Médecine de Belgique*, November 27, 1920) has recorded the results of his researches on the bacteriolytic properties of leucocytes and of alexin (complement). He obtained extracts from white blood cells by exposing them to the action of very dilute acids. When neutralization had been carried out, these extracts were found capable of destroying bacteria after having effected morphological modifications similar to those which the same microbes present, either in the interior of leucocytes which have ingested them or under the influence of the alexin of the serum. The properties of the extracts and those of the alexin are distinct. The action *in vitro* of the bacteriolytic substances of the leucocytes requires a neutral medium. It is possible that the acid reaction observed at first in the interior of a leucocyte which has ingested bacteria, leads to the solution of the bacteriolytic substances of the leucocyte. Further, the subsequent disappearance of this reaction may transform these substances into a colloidal state favourable to their action.

(171) Hetero-Transplantation of Kidney.

LEO LOEB (*Journal of Medical Research*, November, 1920-January, 1921) records the results of his recent experimental work on various mammals. He states that after hetero-transplantation of various tissues into mammalian species, which are distinct from each other, it is quite generally found that the duration of life of the transplanted parenchyma is brief, its mitotic proliferation is diminished and there is relative inactivity of the fibroblasts, which only to a very limited extent enter into specific relations with the transplanted parenchyma. The vascularization of the hetero-transplant is rather poor. The lymphocytic reaction around such a graft is much more restricted than after homoio-transplantation. Different species seem to differ in their suitability as a host to the hetero-transplants, without reference to the relationship between host and transplant. If in hetero-transplantation donor and host species are reversed, the result of the transplantation may be altered. The relation between donor and host is not one of simple reciprocity.

(172) Hæmolytic Fever.

K. YAMAKAMI (*Journal of Pathology and Bacteriology*, December, 1920) records the results of his recent investigations at the Lister Institute on hæmolytic fever. Rabbits were employed as the laboratory animals. It was found that the transfusion of a perfectly unhæmolysed, non-isolytic blood does not cause any appreciable temperature variation of the recipient. The intravenous injection of the animal's own blood or non-isolytic blood of other animals, hæmolysed with water, causes a febrile reaction similar to that produced by foreign proteins. Water, when injected intravenously into rabbits, causes a fever of typical form, even when it is redistilled immediately before the injection. The fever is, therefore, not due to the contamination of water with a pyrogenetic substance of bacterial origin, but is to be attributed to its hæmolytic property. The relationship between the quantity of the injected water and the variation of temperature is quite similar to that which exists in the case of foreign protein injection.

(173) Pulmonary Infarcts Produced by Insufflation of Acid.

M. C. WINTERNITZ, G. H. SMITH AND F. P. MCNAMARA have found that intra-bronchial insufflation of acid causes immediate necrosis of the walls of many alveoli (*Journal of Experimental Medicine*, August, 1920). Thrombosis of the alveolar walls is an associated phenomenon. When a large number of vessels become affected, a clot propagates rapidly into the larger supplying vessels. The resulting lesion is indistinguishable from a hæmorrhagic infarct. It is not unlikely that the infarct-like areas so frequently found in influenzal pneumonia have their origin in a similar process. Infarction depends not only on thrombosis or embolism of the large vessels, but may be initiated by extensive damage to the capillary bed. By this process infarcts may form in organs which are normally protected by collateral circulation.

(174) Splenic Lesions in Splenomegaly.

E. H. KETTLE reports five cases of so-called splenic anæmia (*Journal of Pathology and Bacteriology*, December, 1920). In these cases the examination of the spleen removed by operation reveals a variety of changes representing at least four distinct and entirely different pathological processes. Three of these are anomalous, but the fourth is well recognized under the name of Gaucher's disease. In none of the cases is there definite evidence that the disease is limited to, or primary in, the spleen, and in three the splenomegaly must be regarded as merely the most prominent feature.

PÆDIATRICS.

(175) Plantar Reflex in Early Life.

W. M. FELDMAN (*British Journal of Children's Diseases*, January-March, 1921) tested the plantar reflex of 500 children under seven years of age, the large majority of whom were under four years. He found that 15% gave no response. From the results obtained in the remaining 85% he concludes that the prevailing plantar response in early life is plantar flexion of the big toe. When, however, a dorsiflexion of the toe occurs, it has not the same significance as a similar response in the adult. The pyramidal tracts are sufficiently developed just before birth in full term children to give a normal adult type of plantar reflex even *in utero*, but, owing to easily aroused circulatory disturbances in early life, the consequent changes in the circulation in the region of the cord are sufficient to compress the incompletely myelinated pyramidal tracts and evoke a Babinski phenomenon, either unilaterally or bilaterally. In premature infants, during the first five or six weeks of post-natal life the response is nearly always of the Babinski type, as a result of the almost total absence of myelination of the pyramidal tracts. Malnutrition, as judged by defective weight and length, is not in itself sufficient to give a Babinski sign, but, inasmuch as prematurity is associated with defective weight and length up to about five or six weeks, the Babinski reaction seen in poorly developed infants up to that age is due to the prematurity rather than to the malnutrition. Bilateral plantar flexion is at all ages as common in girls as in boys, but bilateral dorsiflexion is at all age-periods in infancy more common in girls than in boys. Breast feeding during the first few weeks of life probably tends to diminish the incidence of a bilateral Babinski phenomenon. This may be due to the greater percentage in human milk of lecithin and lactose, which promote a more rapid myelination of the pyramidal tracts. After the first month breast feeding has no advantage over bottle feeding in this respect. Toxic influences, either from the bowel or from other causes, do not affect the conductivity of impulses along the fibres of the pyramidal tracts. Bilateral dorsiflexion is commoner in infants whose temperature is subnormal, probably because the congestion of the spinal cord is greater. It is also slightly more common in dolichocephalic than in brachycephalic infants, possibly because inhibitory control is less powerful in the former than in the latter. Rachitis does not favour the occurrence of the Babinski phenomenon. The age at which the Babinski sign vanishes, has no relation to the age at which the child begins to walk. In the majority of very young infants, who cannot even sit up, the Babinski sign is absent and in a large number of those who can walk and are "strong on their legs" the Babinski sign is present. As the peripheral nerves are imperfectly myelinated at birth, a possible explanation of a Babinski reaction in certain infants is the more imperfect development of the lower motor neurone supplying the flexors of the toes, but the better development of the neurone supplying the extensors. In such cases, of course, extension is the only possible movement. The inconstant nature of the response in certain infants, in whom at the same examination a plantar flexion may be obtained on one stimulation and on another a dorsiflexion, may be due to the ready fatigue, as well as quick recovery from fatigue, of muscle in early life, so that after a certain response has been obtained, the muscles producing that response can no longer contract as easily as the opposing groups of muscles and the response is therefore produced by the less fatigued groups of muscles. The "reflexogenous" zone is very diffuse in early infancy. Sometimes a plantar reflex, either flexor or extensor, may be elicited by stimulating a cutaneous area other than the sole, when stimulation of the sole fails to evoke a response.

(176) Absorption of Fluid from the Peritoneal Cavity.

AS intra-peritoneal injection is one of the accepted methods of parenteral administration of fluid, the question of absorption by the peritoneum is of great practical import. From their necropsy findings, B. S. DENZER AND A. F. ANDERSON (*American Journal of Diseases of Children*, June, 1921) state that in several cases large amounts of fluid, injected within thirty hours before death, were completely absorbed. Occasionally fluid was present at necropsy several days after injection and in two cases fibrin was found in the iliac fossa. As a rule, all but a comparatively small amount of the injected fluid was absorbed at the end of 24 hours. By the use of a special trocar and cannula and a specially fitted glass capillary tube, abdominal punctures were made in 50 living children. In 34 cases no fluid was obtained. The 16 patients from whom fluid was obtained suffered in three instances from generalized tuberculosis, in one from ascites with congenital syphilis, in three from peritonitis, in four from marasmus and in five from rickets with "potbelly." That small amounts of peritoneal fluid present could be detected in this way was shown by the recovery of fluid in certain "dry tap" cases from patients into whom 5 c.cm. to 15 c.cm. of fluid had been injected some few minutes before, the capillary tube being inserted either at the point of injection or at some considerable distance from it. The rate of absorption was studied in two series of cases. In the first series single taps were performed a number of hours after one or more injections. In seven children the tap was dry in 12 to 24 hours after injection. In one instance fluid was present 20 hours and in two instances 24 hours after injection. In the second series, after a preliminary dry tap, fluid was injected and abdominal punctures were performed at stated intervals. Absorption was variable from 12 to 48 hours. Solutions of different composition were tried and in a small series of cases the rate of absorption with normal, hypertonic or hypotonic solutions was not more rapid in one than the other. The reaction of the peritoneum was studied by tracing the total and differential cell counts. The number of cells rose rapidly from the third and sixth hours to the thirty-sixth. The differential smears showed large vacuolated mononuclear cells containing leucocytes and free chromatin bodies which are characteristic of early inflammatory reaction of the peritoneum. In fact, the peritoneal fluid showed all the characteristics of an inflammatory reaction. It was mucoid, sticky and fibrinous and contained endothelial cells and leucocytes. The occurrence of a temporary inflammatory reaction should not contra-indicate the repetition of an injection.

(177) Mongolism.

H. THURSFIELD (*British Journal of Children's Diseases*, January-March, 1921) was only able in the year 1920 to trace 25 out of 42 mongol children whom he had seen during the years 1912 to 1916. In a study of 42 cases, he found no corroboration of the statement that the mongol is apt to be the last born child of a long family, or that the mother was necessarily near the end of the child-bearing period when the mongol was born. There was also no evidence to connect the advent of the mongol with any obvious defect in the mother's health during pregnancy or with any taint of syphilis or tuberculosis. In a certain number of cases, however, conception had been delayed for a considerable length of time (five to ten years), either for the first pregnancy or between pregnancies. Of the 25 patients traced, 14 were dead, the cause of death being usually diarrhœa or broncho-pneumonia. Of eleven children examined, aged from six to fifteen years, none showed the least sign of becoming normal with increasing years, though the more obvious signs of mental defect were certainly lessened. The most progress, both mentally and physically, was shown in a child who, throughout the period, had taken small doses of thyreoid extract. The experience of French physicians has been that thyreoid medication has a beneficial effect on the physical and, to a much less, but yet definite extent, on the mental condition. With this experience the author concurs and considers that speech, general intelligence, obedience and even temper seem to be promoted by the use of thyreoid extract, especially if it is administered consistently. He contrasts two of his patients. The first is a docile, amiable, fairly well developed child, with much to say for herself and sufficiently intelligent to be sent on short errands; the other, uncontrollable, liable to attacks of temper, always ailing and not even able to dress himself.

British Medical Association News.

SCIENTIFIC.

A meeting of the Queensland Branch was held at the Children's Hospital, Brisbane, on May 6, 1921, Dr. A. Graham Butler, the President, in the chair.

Mental Deficiency or Mongolism.

Dr. A. C. Ward showed a female child, aged 13 months, whose condition he regarded as either mental deficiency or mongolism. The child had been born at full term. The labour had been difficult. The mother had had five other children all of whom were apparently normal. She had not had any miscarriages. The patient had not made any attempt to sit up, to hold up its head nor to put its hand to its mouth during the first ten months of its life. It had kicked and had moved its limbs. The child took its food well and was growing weaker. Four teeth had been erupted. The fontanelle was closed. There was no ascertainable abnormality of the heart. The child had trouble with its tongue. There had been no reaction to the Wassermann test. The mother had said that she thought that the child was intelligent and understood what was said. He was treating the patient on extract of thyreoid gland.

Dr. A. Jefferis Turner considered that there were no stigmata of mongolism. He expressed the opinion that the condition had arisen as a result of the difficult labour, leading to defective development of the motor area. He noted that spasticity was not present; but it might develope at a later date.

Dr. S. F. McDonald regarded the condition as mongolism without characteristic symptoms. The facies and the shape of the fingers were not characteristic, though the child had the typical angelic temper.

Anæmia with Endocarditis.

Dr. A. Graham Butler presented a girl, aged two years and four months. She had been growing weaker during the past four months. She could scarcely walk. She complained of pain in her back and legs. Swallowing was difficult and vomiting frequent. The patient had become very pale and the whole body was swollen. The anæmia was obviously progressive. There was enlargement of the liver and progressive œdema, chiefly involving the limbs. The face became swollen in the morning. The blood count had revealed 2,314,000 red blood corpuscles per cubic millimetre, 60% hæmoglobin, a colour index of 1.4 and 12,000 white cells. A few nucleated red corpuscles were noted. The serum did not yield a Wassermann reaction. No abnormal constituent had been found in the urine and no ova were detected in the fæces. The apex of the heart was placed 7.5 cm. from the middle line in the seventh intercostal space. The first sound was "slapping" and there were systolic and diastolic murmurs. The child had had no previous illnesses, except a hernia when she was one year and eight months of age. The family history was good, except that an elder brother suffered from psoriasis. The diagnosis was anæmia and probably endocarditis.

Dr. A. Jefferis Turner was not convinced that the condition was not luetic, even in the absence of a Wassermann reaction. He did not think that the enlargement of the liver could be accounted for on the assumption of a primary anæmia.

Dr. S. F. McDonald had thought at first that the condition was pseudo-leuchæmia. On examination, however, he had come to the conclusion that it was a congenital heart lesion with some other pathological condition superimposed, probably an active ulceration of the bowels.

Dr. Graham Butler stated that he would have the cerebro-spinal fluid tested for complement deviation. There seemed to be some obstruction to respiration, as there was retraction of the lower ribs.

Psoriasis.

Dr. S. F. McDonald read the notes of a boy of seven years who had suffered from psoriasis for several months. He had been in hospital in 1919 for two months. The condition had then cleared up completely under treatment with chrysarobin. The Wassermann test had failed to give a reaction. The condition had recurred after the child had been discharged from hospital. Dr. McDonald asked for suggestions regarding the treatment.

Dr. A. C. F. Halford advised that the strength of the ointment used should be cautiously increased.

Dr. A. Jefferis Turner said that psoriasis was easy to diagnose, but difficult to treat. He would give the patient a rest for a time, as the skin was very red; he would not give large doses of arsenic.

Dr. V. McDowall expressed the opinion that strong ointments of chrysarobin would cause toxic symptoms. He recommended small doses of X-rays.

Dr. McDonald, in reply, said that no chrysarobin ointment was being applied, as there were raw areas of skin. He would like to know how X-rays could be applied to cover the whole body.

Dr. A. T. Nisbet said that in a severe case of ten years' duration, involving all the limbs, he had made 72 applications. The patient had been free from recurrence for a period of seven years.

Tumour of Internal Maxillary Fossa.

Dr. S. F. McDonald's second patient was a boy, aged three years and three months. Eighteen months before he had had a fall on the back of his head. It was then noticed that his eyes turned inwards. The condition had persisted with little change for ten months, when he had another fall. Since then he had been unable to walk or to stand and torticollis had appeared. A lump had appeared in the malar region six months before admission. He had complained of some pain in the frontal and parietal areas. There had been incontinence of urine for six months. He had been seen in consultation with Dr. R. Graham Brown, who had detected commencing double optic atrophy and a large mass filling the antrum and naso-pharynx. The antrum had been punctured and a little clear fluid containing only a few cells evacuated. He was being treated by means of Röntgen rays with definite, albeit slight improvement. The diagnosis was a tumour of the internal maxillary fossa.

Dr. A. T. Nisbet said that radium was preferable for inaccessible parts. In this instance X-ray treatment would be better, because more massive doses could be applied over a large area.

Dr. E. S. Meyers suggested the use of Coley's fluid.

Dr. Graham Butler disapproved of the use of Coley's fluid. He had seen six patients in whom there had been no improvement, but hideous suffering throughout the time the fluid was being applied.

Dr. V. McDowall said that the patient seemed to have comfort after the application of X-rays; he would have none if Coley's fluid were used.

Dr. D. Gifford Croll related the history of a patient suffering from sarcoma for which Coley's fluid had been prescribed. Owing to severe hæmorrhage, the fluid was not used. Great improvement had taken place, though there had been a recurrence after four years. Had Coley's fluid been injected, this case would have been quoted as a successful result of the treatment.

Hæmophilia.

Dr. McDonald also showed a girl, aged three years, who bruised on the slightest injury during the past twelve months. It was said that she bled very easily. Her father's sister also bruised readily. The family consisted of three individuals, two girls and one boy. Dr. McDonald was treating the girl with calcium lactate and normal horse serum.

Dr. D. A. Cameron suggested the injection of 10 c.cm. of maternal blood subcutaneously. He had found this procedure useful for hæmorrhage in enteric fever.

Dr. A. Jefferis Turner considered the condition as an instance of hæmophilia, although the patient was a female. Serum was useful in emergency.

Dr. A. C. F. Halford asked for the evidence for the statement that the father's sister bruised readily.

Dr. McDonald said that the father had made the statement. It was probable not reliable.

Hare Lip and Cleft Palate.

Dr. D. A. Cameron presented a male child, aged 11 weeks, with a hare lip and cleft palate. The child had been born

at full term and the labour had been normal. The child had been fed on "Lactogen"; no breast feeding had been carried out. Dr. Cameron had performed a modified Brophy's operation for the cleft palate on April 25, 1921.

Dr. A. Jefferis Turner suggested that the hare lip should have been treated first and the cleft palate after an interval of twelve months.

Dr. G. P. Dixon said that he would like to see the child at a later date, before expressing an opinion on the operation. He referred to an article by Gillies in the *British Medical Journal*. He had found that the cure of speech defects after an operation on the palate was very difficult.

Dr. J. Lockhart Gibson said that, in his experience, girls did better than boys in regard to speech, because they were more particular and took greater pains to re-educate themselves. He did not like the idea of leaving a hard palate alone.

Dr. A. Graham Butler said that, judging from the defects in speech in adults, the results were very bad in many cases of cleft palate, especially when the operation was performed after infancy. The closure of both palates produced a hard, cicatricial flap over the palate, which did not move and which had the uvula flapping at the end, forming an impediment and not an assistance to speech. He thought that Gillies had approached the subject in a sound manner.

Dr. Cameron, in his reply, said that Gillies had claimed that the obturator palate should be applied in infancy. It was difficult to have them made in Australia. He had pared the edges and had brought the anterior parts of the hard palate together to obtain a good arch. Later he proposed to carry out a Langenbeck operation, if possible. He would repair the lip after the palate had united.

Acute Osteo-Myelitis.

Dr. D. A. Cameron demonstrated a boy, aged six years, suffering from acute osteo-myelitis. On January 1, 1921, the child had received a blow with a stone on the right ankle. On February 2, 1921, the left knee became swollen and tender and the child was feverish. On March 3, 1921, the right ankle swelled and became tender. The fever had increased. Fomentations had been applied to the joints and the swelling of the knee had subsided, but not the swelling of the ankle. The swelling extended up the leg. On admission the temperature had been 38.3° C., the pulse-rate 120 and the respirations 34. On April 12 he had made an incision along the median surface of the right tibia. Pus had been evacuated and a large surface of bare bone discovered. The bone had been drilled and gouged. There was at that time no pus in the medulla. On April 21, 1921, he had made a further incision over the epiphysis. Pus had been withdrawn and some sequestra removed. Dr. Cameron exhibited some skiagrams of this case.

He also showed a boy, aged seven years, with osteo-myelitis. The condition had started as an acute infection, but had become chronic. The onset had taken place on June 27, 1920, with a pustular rash on the right leg and thigh, followed by swelling of the leg. The thigh and leg had been incised and fomented on July 1, 1920. Later the right elbow had become inflamed. An incision had been made below the knee and another on the inner side of the ankle. Blood-stained pus had been obtained from both. The wounds had been syringed with eusol. There had been a profuse discharge. The condition had recurred on September 17, 1920. Early in November the tibia scar had been reopened and the bone drilled. Eusol irrigations had then been instituted. Skiagrams taken at different stages were exhibited.

Dr. J. J. Power referred to the results obtained by Stiles, who performed sub-periosteal resection of the whole shaft of the bone for osteo-myelitis.

Dr. Cameron stated that if there had been a good flow of pus, he would have left the bone alone until the process had become quiescent. A simple petroleum dressing would have been sufficient. When pus was not present, it was necessary to trephine the bone. He thought that the removal of large pieces of bone might have meant losing his patient.

Syphilitic Arthritis.

Dr. E. O. Marks gave an account of a syphilitic effusion in both knees of a girl, aged eight years. The fluid had appeared early in February, 1921, and had been greatest under the quadriceps tendon. There had been no pain. No other joints had been affected. There was a slight interstitial keratitis. A definite Wassermann reaction had been obtained in August, 1920, and April, 1921. The knee joints had been aspirated on frequent occasions. Clear fluid had been withdrawn, containing neither cells nor organisms. He had not been able to elicit the details of the family history. The child had been treated by the ordinary constitutional means, while Scott's dressing had been applied locally.

Dr. J. Lockhart Gibson said that he had long recognized that interstitial keratitis in children could be accompanied by synovitis in both knees. He did not believe that local treatment was of advantage, either for the eyes or for the knees. In acute cases of interstitial keratitis, however, it was safer to keep the pupils dilated. He considered surgical treatment for the synovitis meddlesome. The patient had been in the ward with acute interstitial keratitis and had improved considerably. The mother had taken the child away, against Dr. Lockhart Gibson's advice. The patient returned some months later with a recrudescence of the keratitis, as well as the peculiar form of synovitis of both knees, which seemed to be pathognomonic of inherited syphilis. Dr. Marks had continued the inunction. The corneæ were quite clear and the knees much improved. Perseverance with inunction would yield a good result and sufficient perseverance with constitutional treatment might be expected to safeguard the child's future. He pointed out that the joint lesions might occur in the absence of keratitis or Hutchinson teeth to assist the diagnosis.

Diphtheria with Albuminuria.

Dr. D. Gifford Croll related the history of a child who had suffered from diphtheria with albuminuria. The diphtheria was tonsillar and severe. Diphtheria antitoxin, 6,000 units in amount, had been injected. Albuminuria had appeared on the sixth day and had continued up to the eighteenth day. The child had sat up on the thirty-fourth day and had died after a syncopal attack on the thirty-seventh day. It was usually taught that albuminuria in diphtheria was not important. There were 47 patients in the ward and of these 15 had albumin in the urine. He held the opinion that albuminuria, which occurred in 25% of all diphtheria patients, was an indication that changes similar to those in the kidneys were present in the heart muscle. The greatest care was consequently needed in these cases. The only sign of cardiac implication in his patient had been a slight increase in the pulse-rate.

Dr. A. Jefferis Turner stated that a trace of albumin in the urine was common in diphtheria patients; it did not persist, as was the case in scarlatina. No untoward event happened, provided that there was a free secretion of urine. The prognosis was bad when the albumin increased in quantity and the urine became scanty. Anuria was probably due to the low blood pressure. Albuminuria did not cause heart failure; both were caused by toxæmia. In naso-pharyngeal diphtheria there was frequently only a small amount of membrane. Unless a large amount of membrane hidden from view was assumed and large doses of antitoxin were given, the prognosis would be bad.

Dr. J. Lockhart Gibson asked whether these serious sequelæ occurred if the diagnosis were made early and large doses of antitoxin were administered.

Dr. S. F. McDonald stated that the majority of Scholes's patients were seen late and that all the organs were found to be involved in cloudy swelling. Early diagnosis and large doses of antitoxin should prevent a fatal issue.

Dr. E. Culpin said that sudden death at times occurred in mild infections. Post-diphtheritic paralysis was seen as a result of both mild and severe diphtheria.

Dr. Croll wanted to know if the albuminuria was a warning that the child had had insufficient antitoxin, or was it a sign that the infection had not been diagnosed early enough.

Recurrent Nephritis.

Dr. A. Graham Butler brought up a child of 6½ years, with recurrent nephritis. The child had been shown at a meeting of the Clinical Society in March, 1921. She was suffering from a further recurrence. There had been œdema of the legs from time to time during the month. Generalized œdema was present on admission. The eyes

were normal. The sister and the brother of the patient were said to have a "touch of Bright's disease." Her mother suffered from some renal disturbance. The urine was acid and had a specific gravity of 1015. There was 2% of albumin, but very few casts were seen. He asked for guidance in regard to the prognosis. He raised the question whether the condition was suitable for the operation of decortication.

DR. S. F. MCDONALD thought that, unless something were done, the prognosis would be very bad. He recommended decortication. The condition was probably one of the large, pale kidney.

DR. A. C. F. HALFORD said that the prognosis was not good and that decortication was justified. The disease was very common in families and was due in the majority of cases to scarlet fever. The absence of information concerning an attack of scarlet fever was not important.

DR. M. GRAHAM SUTTON asked for information concerning the condition of the heart and blood pressure in Dr. Graham Butler's patient. He would also like to know whether renal dwarfism had been observed in the familial form of nephritis.

DR. J. LOCKHART GIBSON stated that albuminuric retinitis would form a contra-indication to operation. It was a sure sign that the patient would not live for more than eighteen months.

DR. GRAHAM BUTLER said that there was no evidence of cardiac involvement. He had never seen a case of renal dwarfism. In one family three of the patients were undersized, as compared with the parents.

Ocular Plumbism.

DR. E. O. MARKS showed a boy, aged five years, with ocular plumbism. The child had been in and out of hospital with this condition for several months. The condition was associated with vomiting, colic and signs of increased intra-cranial pressure. Basophilia was present, although it had been absent on September 30, 1920. The blood serum and cerebro-spinal fluid had been subjected to the Wassermann test without result. There were no cells or globulin in the cerebro-spinal fluid. The papillœdema was decreasing.

Broncho-Pneumonia with Encephalitis.

DR. A. GRAHAM BUTLER read the notes of a girl, aged 3½ years, who had been sent to hospital with the diagnosis of pneumonia. She had been ill for three days. She had complained of shivering and of fever and she had had "faint turns." There was a distinct squint on the day of admission. The child previously had enjoyed good health. She had been an intelligent and active girl. On admission there were signs of broncho-pneumonia and of cerebral irritability. She refused to take food and had screaming outbursts. There was a right internal squint. The knee-jerk on the left side was absent. The plantar jerk was active. There was no Kernig's sign. No head retraction had been noted. The temperature was 39.4° C., the pulse-rate 150 and the respirations between 30 and 40. No paralysis had been detected. The diagnosis was made of broncho-pneumonia with probable encephalitis. As the disease progressed, there was extreme cerebral irritability, loss of spech, semi-coma, paralysis of boths arms and paresis of the legs. The climax was reached about the third week. The child had made steady improvement since. She had been treated with iodides, bromides and chloral. There was still double wrist drop. Both knee-jerks were absent. There had been a gradual improvement of her intelligence.

A MEETING of the Queensland Branch was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on July 1, 1921, DR. A. GRAHAM BUTLER, the President, in the chair.

Cerebral Abscess.

DR. R. GRAHAM BROWN read notes of a case of cerebral abscess and exhibited the specimen (see page 313).

DR. A. C. F. HALFORD considered that Dr. Graham Brown's case was a typical one of sub-acute cerebral abscess. Serious secondary infection might occur weeks after the primary infection. The history of the illness illustrated the ineffectiveness of surgical intervention in multiple cerebral abscess.

DR. S. F. MCDONALD asked Dr. Graham Brown why he had not operated sooner, when papillœdema and mental hebetude had been present.

DR. W. N. ROBERTSON referred to a case of acute frontal sinusitis with osteo-myelitis. He had opened the sinus and had found a necrosed area of the brain. This area was not touched. The patient appeared to be well for ten days and then became dull and stupid. He then removed the necrosed area and discovered an abscess five centimetres from the surface of the brain. The patient lived three days after the discovery of the abscess. There had been no vomiting and headaches had appeared only at the end.

DR. GRAHAM BROWN, in reply, stated that the posterior wall had been clean at the time of the operation and the wound healed. There had been no localizing symptoms, except right hemiparesis. He could not reconcile this with a frontal lobe lesion. He regarded the prognosis as bad sooner or later in every case of intracranial suppuration. The surgeon should weigh the question of decompression in the presence of papillœdema which did not clear up rapidly.

Ocular Plumbism.

DR. J. LOCKHART GIBSON read the notes of a girl, aged eight years, who had been sent to him on July 1, 1921, on account of headache, vomiting, slight retraction of the head and pain at the back of the neck. She had been ill for some months and had been under treatment for three months. Lumbar puncture had been carried out in May and increased pressure of the cerebro-spinal fluid had been noted. No acetone nor albumin had been found in the urine. The symptoms had diminished during the month of June, but the sight had become progressively impaired. She had no perception of light when seen by Dr. Lockhart Gibson. There had been no paralysis of any of the extrinsic muscles of the eye. Distinct papillœdema was found in each disc.

Dr. Lockhart Gibson stated that lead in the form of powdered paint had been present on the verandah rails and garden fencings. More recently the child had had no opportunity of ingesting lead, as the blindness had prevented her from getting about. The provisional diagnosis of the practitioner who had referred the patient to him, had been intracranial tumour. He held that the diagnosis lay between gumma, glioma and plumbism.

The child had been sent to Dr. Duhig with a request that the blood be examined. The Wassermann test did not yield a reaction. Definite basophilic degeneration of the erythrocytes had been discovered. The basophilic granules were of the coarse type. These coarse granules, Dr. Duhig regarded, were frequently associated with plumbism. Dr. Lockhart Gibson expressed the opinion that the discovery of basophilia was very valuable in determining the diagnosis in otherwise atypical cases of plumbism. He stated that he intended to employ de-ionization. It was probably too late to save the vision, but he predicted that, if the diagnosis were correct, the child would live. He expected that the de-ionization would remove all the lead and thus the likelihood of chronic nephritis supervening at adolescence would be reduced to a minimum. In conclusion, he stated that if the legislation to abolish the use of lead paint within the reach of young children had been put in force years ago, cases of this kind would not still be a reproach to the community.

DR. DUHIG exhibited the blood smears, showing marked basophilia.

DR. A. GRAHAM BUTLER raised the question whether basophilia was as diagnostic of plumbism as Dr. Lockhart Gibson maintained. He referred to Dr. Litchfield's paper, in which he had stated that basophilia was seen in association with other conditions. It would seem that basophilia should be regarded as of minor diagnostic importance.

DR. S. F. MCDONALD referred to the periodic examination of all workers in German lead industries and the removal of men showing signs of lead poisoning to more healthy occupations.

DR. R. GRAHAM BROWN did not think that all the cases diagnosed as lead papillœdema in Queensland were actually due to lead.

DR. LOCKHART GIBSON held that lumbar puncture, re-

peated, if necessary, in ocular plumbism sufficed to prevent blindness, provided that it was carried out before the sight was lost. If the papillœdema had lasted too long, the nerve was destroyed and neither lumbar puncture nor decompression would do any good. He regarded decompression by trephining as meddlesome surgery in the cases he had described as plumbism.

Medical Practice.

Dr. A. C. F. Halford read a paper entitled "Medical Practice of To-Day" (see page 303).

Dr. J. Lockhart Gibson expressed the opinion that medical ethics depended on two things: the golden rule and not being a quack. They should impress the public that they were searching for the truth. A quack was a person who promised to cure—an unscientific promise.

Dr. T. H. Mathewson said that it was important not to give a gloomy prognosis. Practitioners sometimes gave definite dates for the decease and often these prophecies did not come true. They should not tell a patient that his heart was weak, except for very special reasons, nor should they warn him that he should not have an anæsthetic.

Dr. E. S. Meyers thought that medical practitioners should take a more active part in public life. He dealt with the question of double calls.

Dr. C. E. Tucker held that a consultant, after examining the patient, should discuss the case with the practitioner and should not give information to the family, except with the practitioner's permission.

Dr. S. F. McDonald said that the family of the patient expected a statement from the consultant in all cases. He considered that this should be given when all the members of the family had been brought together. Unless this were done, it might induce individual members to waylay the doctor and endeavour to obtain additional information from him.

Dr. R. Graham Brown asked how often the advice of a specialist was ignored by the general practitioner. He said that it was a common occurrence that, after the specialist had referred the patient back to the general practitioner with an opinion, the latter sent the patient to another surgeon for operation.

Dr. A. Graham Butler said that in any great effort, such as the war, it became evident that they were largely dependent on heredity and on the standard set by their forefathers to impel them to live up to past traditions. They could not get away from history. They held a great tradition, which they shall pass on not less fine than it had been handed on to them. The men who practised real specialism, should be supported by the general practitioners more effectively than was the case in Brisbane. Many of the older men looked upon their patients as their personal property. They were supposed to be men of erudition, but they should realize that the public was more highly educated than they supposed. They should take their patients more into their confidence than they did, especially in difficult cases. He thought that Dr. Halford's idea of prognosis would be difficult to apply. They often were compelled to hedge and to safeguard themselves against unforeseen accidents. The patient should never be told a deliberate lie without careful consideration. He held that the most powerful agent in maintaining high ethical standards was the British Medical Association. Papers, such as that of Dr. Halford's, were of the utmost value.

Dr. J. V. Duhig said that, while conquests had been made in the material world, no advance in intellectual culture had been registered since the Grecian period. The medical student received material teaching, but was not an educated man like bishops and judges. He suggested that medical or public health lectures should be included in the series of public lectures given at the University.

Dr. J. A. Cameron had always found his relationship with specialists a happy one. The opinion of the consultant should be given to the relatives.

Dr. Halford, in his reply, thanked the members for the manner in which they had discussed his paper. The patient and his friends had a right to hear everything the consultant had to say. The permission of the general practitioner was needed but his permission should not be withheld. In regard to double calls, his own practice had been to cause a message to be sent to a colleague, asking him to attend the patient when he himself was prevented from going. The fee could be divided at a later date.

MEDICO-POLITICAL.

Deputation to Minister.

The Council of the Queensland Branch, at its meeting held on September 23, 1921, determined to take the initiative in endeavouring to insure co-operation between the medical profession on the one hand and the health authorities and general public on the other in combating the plague outbreak. The Public Health Sub-Committee was instructed to interview the Federal and State health authorities and to issue such information and suggestions through the public press as they might think advisable. It was provided that nothing should be published in the daily press that was not in accord with the action or advice of the health authorities without specific instructions from the Council.

The Sub-Committee decided to issue to the members of the Branch a brief memorandum containing the salient points of the epidemiology and symptomatology of plague. It was also resolved to issue a statement to the public through the daily press of the views accepted by the medical profession concerning the incidence of plague, with a view to the education of the public in the arrangements necessary for the safe and efficient treatment of persons suffering from plague and for the isolation of premises and suspects. It was held that there was a general lack of precise knowledge on these matters and a tendency to call for stringent action, based on vague ideas of the communicability of plague through channels other than those which are known to exist. It was further determined that no information concerning the symptomatology of plague should be published in the daily press.

The Sub-Committee also resolved in regard to the stamping out of the outbreak that the combating of the rat epizootic was to be urged as the one and only factor of importance. This factor involved a definite and individual responsibility on the public and especially on the responsible proprietors of large shipping and warehouse firms and of the various local health authorities. The probability of the extension both of the rat epizootic and of the disease among human beings in the late summer and autumn would be emphasized as an incentive to vigorous and continuous action. This extension occurred in the last outbreak.

On October 1, 1921, the Sub-Committee interviewed the Chief Quarantine Officer in Brisbane and the Commissioner of Public Health of Queensland. On October 3, 1921, they waited on the Chief Secretary, the Honourable William McCormack. At the former interview a memorandum drawn up by the Sub-Committee was presented as a basis for discussion. This memorandum was used at the deputation. The following points were presented:

Hospital Accommodation.

Since isolation in hospital is essential for those suffering from plague, the Sub-Committee raised the question whether it was necessary for patients to be carried eight miles out of Brisbane to the Quarantine Isolation Hospital at Lytton. It was urged that the patients could be housed with equal safety and greater satisfaction in an institution organized and equipped for the purpose centrally situated in Brisbane. The Isolation Hospital at Wattlebrae, adjoining the Brisbane General Hospital and under the same administration, appeared to the deputation to be a suitable institution for the purpose. It was further claimed that a small accessible bureau should be established for the detention, examination and treatment of persons suspected to be suffering from plague.

The Minister concurred in the suggestions. He proposed to endeavour to carry them out, provided that the Queensland Branch of the British Medical Association, as the representative organization of the medical profession in the State, would bear the onus of responsibility for the safety and suitability of the arrangements.

Incidence of the Disease.

The Sub-Committee urged that the experience of previous outbreaks should be made known to the public. The

curves of the incidence of infections in rats and human beings reached a low level in winter, spring and early summer and rose in the later part of the summer and autumn. The highest point was reached about April. It was thought that the policy of keeping the public and medical profession unenlightened in regard to the danger of an extensive outbreak and in regard to the details of the epidemic and of the course of the campaign aiming at its control was unwise. It was explained that some of the details should be made available to the public, while all the details should be given to the medical profession. At first the Minister appeared disinclined to adopt a policy of publicity. After full discussion he agreed with the proposals. He insisted that the public should not be informed concerning the symptoms of plague. Information necessary to secure the assistance of the public in carrying out the regulations for the treatment of persons suffering from plague, for dealing with infected premises and with contacts and especially for combating the rat epizootic should be published. The Minister wished to emphasize in all public utterances the small incidence of the disease and its relatively slight importance in civilized communities as compared with diseases like tuberculosis.

Foci of Infection.

The Sub-Committee was anxious to discuss the measures to be adopted in regard to the dwellings of persons contracting the disease. The question arose as to whether it would be necessary to place the houses in quarantine when the disease had been contracted elsewhere. It was suggested that no isolation should be employed if the houses were found to be free from infected vermin. The freeing of infected premises of fleas after the destruction of the rats was discussed. The State health authorities regarded the proposal put forward by the Chief Quarantine Officer, of using guinea-pigs as flea-traps, impracticable. The Sub-Committee supported this proposal. The Commissioner of Public Health wished to rely on the detention of merchandise (fodder, etc.) and on the closing of premises for a period of twelve days.

Official Information.

The Sub-Committee desired that the bulletin issued by the State Government, containing information concerning the places where infected rats were discovered, should be circularized to the medical profession. The Commissioner of Public Health outlined the plan of campaign prepared in regard to the destruction of rats. The Minister promised that the bulletin would be issued to the members of the medical profession, in order that they might be put on their guard in the event of illness arising in the infected areas.

Anti-Plague Serum.

The Sub-Committee asked for an assurance that an ample supply of serum was available. The Chief Quarantine Officer had stated that the chief difficulty in providing a supply of local serum and vaccine lay in the inability of the Commonwealth Serum Laboratories in obtaining suitable local cultures of *Bacillus pestis*. The State Health Department had not yet provided him with one culture for the Laboratories. Dr. Halford, speaking as the medical officer in charge of the last outbreak in Brisbane, referred to the undoubted value of serum in the treatment of plague.

Collaboration Between the Health Authority and the Medical Profession.

The Commissioner of Public Health undertook to co-operate with the profession in connexion with the rat destruction campaign. The Sub-Committee wished to be in a positon to give sound advice to patients on this matter. They urged publicity and collaboration.

The Minister thanked the Sub-Committee for having come to him. He invited their continued co-operation and promised them his assistance in handing on information. He was also disposed when this was possible, to act in conformity with the views of the medical profession in connexion with the strictly scientific aspect of the plague administration. The occasional operation of other factors, economic, political and social, however, had to be taken into account.

The lack of cordial co-operation between the State Health Department and the Quarantine Department was very marked. This was obviously operating disadvantageously to the effective combating of the outbreak. It was hoped that the Queensland Branch of the British Medical Association might be of assistance in neutralizing this and in helping to bring about more concerted action.

TRANSACTIONS OF THE COUNCIL OF THE VICTORIAN BRANCH.

The following is a summary of the more important transactions of the Council of the Victorian Branch during the months of August and September:

Salaries of Teaching Staff at the University.

A communication was received from the full-time medical sub-professorial staff of the Melbourne University with regard to the salaries received. A resolution was forwarded to the University Council as follows:

> That, in the opinion of this Council the salaries at present paid to the full-time sub-professorial staff of the Medical School are insufficient to offer a life's career to a medical graduate. The chief results of an ever-changing junior teaching staff are the lack of research work and a teaching efficiency below that which would prevail with a permanent and, therefore, experienced staff.

Scale of Fees.

The scales of fees for medical attendance, surgery and radiology has been revised and printed. This will be circulated amongst members shortly. Provision is made for intermediate fees.

Meetings of the Branch.

The attendance at the monthly meetings has overtaxed the capacity of the Medical Society Hall. Arrangements have been made for the meetings to be held at the Pathological Lecture Room at the Melbourne Hospital. In the meantime, an architect has been engaged to report on an extension of the present buildings and a sub-committee of the Council is considering a scheme of building elsewhere, which would become self-supporting by the letting of professional rooms.

Nomination of President of Congress.

The Council nominated Mr. G. A. Syme to the Branch for acceptance as its nominee to the Federal Committee for the position of first President of the Australasian Medical Congress, British Medical Association, to be held in February 1923.

Federal Committee Representatives.

Mr. G. A. Syme and Dr. R. H. Fetherston, M.L.A., were elected by the Council as representatives on the Federal Committee, 1922.

Congratulations.

The congratulations of the Council were offered to Drs. Stanley Argyle and R. H. Fetherston, both members of the Council of the Branch, on their election to the Legislative Assembly of the Parliament of Victoria. With Dr. J. R. Harris in the Legislative Council, the Branch is to be congratulated on its strong representation in the government of the State.

Fees for Post Mortem Examination and Evidence in Coroner's Court.

A country member wrote, pointing out the injustice suffered by the profession where one of its members was called upon to conduct a *post mortem* examination and give evidence in the Coroner's Court. Mileage is allowed at 1s. per mile one way after the first ten miles and in practice it works out that for a *post mortem* examination twenty miles from his residence he receives 10s. from the Government and pays out of pocket £2 10s.. The three parliamentary representatives were requested to wait on the Attorney-General, to see if this anomaly could not be rectified.

Election of Representatives on Council.

It was reported to the Council that, under the new scheme of representation on the Council, the following have been elected representatives of their divisions:

Country Divisions: DRS. A. W. MORGAN, J. I. CONNOR, F. J. BONNIN, W. A. SPRING and J. W. FLORANCE and two more to be elected.

Metropolitan Divisions: DRS. J. W. DUNBAR HOOPER, ALEX. LEWERS, J. F. WILKINSON, ALLEN ROBERTSON, NEWMAN MORRIS, F. L. DAVIES, F. E. MCAREE and J. P. MAJOR.

The returns for two electorates are incomplete.

Library.

Donations to the Library were received from DRS. A. V. M. ANDERSON, R. H. FETHERSTON, E. H. EMBLEY, A. M. WILKINSON and from the Editor of THE MEDICAL JOURNAL OF AUSTRALIA.

War Memorial Fund.

DR. HOOPER reported that £505 had been received for the War Memorial Fund, that a commission had been given to Mr. Web. Gilbert to execute a memorial to the fallen medical officers in bronze, the work to be completed not later than February, 1923.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch:

MERVYN HETHERINGTON THOMAS, Esq., M.B., Mast. Surg., 1921 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

JOHN ROBERTSON NIMMO, Esq., M.B., 1921 (Univ. Sydney), Narandera.

HENRY GEORGE DOUGLAS COOKSON, Esq., M.B., 1920 (Univ. Sydney), Royal North Shore Hospital, St. Leonards.

WAR MEMORIAL FUND IN VICTORIA.

THE following is an additional list of subscribers to the War Memorial Fund of the Victorian Branch of the British Medical Association: John Adamson, James Bell, S. G. L. Catchlove, M. W. Cave, Elizabeth Clucas, Louis P. Crivelli, M. Crivelli, W. J. Denehy, F. J. Drake, Carl P. W. Dyring, R. Dennington Fisher, E. L. Gault, John Gordon, R. W. Hornabrook, G. Horne, F. E. Hutchinson, A. S. Joske, Glen A. Knight, Harrie B. Lee, J. F. Mackeddie, J. P. Major, T. A. McLean, F. H. Moran, A. W. Morgan, R. H. Morrison, F. A. Newman, J. E. Nihill, M. B. O'Sullivan, J. V. Pearce, S. Docker Read, R. L. Rosenfield, T. F. Ryan, F. V. G. Scholes, P. G. Shelton, H. D. Thomas, A. H. Twaites, E. R. White, T. A. Wilson, Gweneth Wisewould.

Public Health.

THE PLAGUE OUTBREAK.

THE DEPARTMENT OF HEALTH OF THE COMMONWEALTH is now issuing a bi-weekly bulletin, containing information concerning the outbreak of plague. The records of the number of rats caught and that of rats found to be infected with *Bacillus pestis* are kept up to date in this way. In each bulletin there is added other information concerning the infections in human beings and concerning the measures taken in various ports to combat the infection. From the bulletins to hand we gather that, up to September 30, 1921, 4,935 rats had been destroyed in Brisbane. Of these, 28 had been found to be infected. This number was increased by 24 on October 6, 1921. On September 30, 1921, a boy, aged five years, living at Birley Street, Spring Hill, was found to be suffering from plague and was removed to the Quarantine State at Lytton. On October 6 a boy was admitted to the Wattlebrae Isolation Hospital suffering from plague. Up to this date four infections in human beings have been under treatment in Brisbane, two of which have terminated fatally.

In Townsville, of 182 rats examined at the Institute of Tropical Medicine up to October 5, 1921, 37 were found to be infected. A fatal infection in a girl occurred on September 21, 1921, and another fatal infection in a man on October 3, 1921.

An infected rat was found at a boarding-house in Cairns on September 12, 1921. Three infected rats had been found up to October 4 in Rockhampton and one in Ipswich. While suspicion existed concerning some rats caught in Darwin, the presence of definite infection had not been confirmed up to the time of issue of the bulletin, No. 4.

Infected rats, numbering 17 in all, were found in a circumscribed area in Sydney.

Full details are given in regard to the destruction of infected and other rats on board the following ships, *Wyreema*, *Bombala*, *Kuranda*, *Levuka* and *Wyandra*.

On September 28, 1921, all the State Governments were asked to supply the Commonwealth Department of Health with a daily statement of the number of rats destroyed and of the rats infected within the States. This information is required in order that the requirements of the International Convention may be satisfied. The Commonwealth Department of Health took over the control of all inter-State shipping in connexion with plague precautions. A definite procedure has been adopted for dealing with ships having on board persons suffering from plague, when the infection has not been contracted on board, as well as when there is a source of infection on the ship.

Special precautions are being taken to prevent the introduction of plague from Queensland into Papua. Burns, Philp & Company have decided to omit Queensland ports on the journeys to and from Papua. Passengers may be picked up at the Pile Light, in Moreton Bay, outside Brisbane, but in this case the ship will be liable to surveillance for seven days from the date of departure from Brisbane.

MEDICAL INSPECTION OF SEAMEN.

THE DEPARTMENT OF HEALTH FOR THE COMMONWEALTH has taken steps to bring into force the provisions of the *Navigation Act, 1912-1920*, dealing with the medical inspection of seamen. It is announced that the following Medical Officers of the Department have been appointed Medical Inspectors of Seamen for the purposes of the Act: DRS. G. A. BLUMER, F. E. COX, J. S. C. ELKINGTON, M. J. HOLMES, F. MCCALLUM, A. J. METCALFE, P. W. MITCHELL, K. MOORE, G. A. MURRAY, C. L. PARK, F. W. A. PONSFORD, C. W. REID and W. C. SAWERS.

Obituary.

HENRY MARTIN LIGHTOLLER.

THE news of the death of Henry Martin Lightoller has cast a gloom among his many friends in Ipswich, where he had practised for many years. In Brisbane, too, his colleagues and friends have been profounded affected by the news and their sympathy goes out to his widow, sons and daughter.

Henry Martin Lightoller was the youngest son of the late George Henry Lightoller, of Charley, near Manchester. He was born on October 17, 1851. He went to school at Windermere College, Windermere, and studied medicine at Owen's College, Manchester. In 1874 he qualified as a member of the Royal College of Surgeons of England and in the following year he took the licentiate of the Royal College of Physicians of Edinburgh and the licence of the Society of Apothecaries of London. His first professional appointment was that of Junior House Surgeon at the Manchester Royal Infirmary. In 1876 he became House Physician at the same institution and held this position for a year. He then started in general practice at Fleetwood, Lancashire, but a year later he set out as ship's surgeon on board a sailing-ship and landed at Rockhampton at the end of 1878. At this time the late Dr. Aspinall had been forced to relinquish his practice at Ipswich on account of ill-health. Henry Martin Lightoller took over the practice in 1879 and for a period of eighteen years he gave of his best to an ever-increasing number of patients. He was a very skilful and sympathetic practitioner and always held the complete confidence of those who sought his aid. Early in 1897 he transferred his practice to Dr. Roderic Macdonald and he left on a journey to England. He sat for the degree of doctor of

medicine at the University of Durham in 1898. On his return to Queensland in the following year, he set up as a consulting physician in Brisbane. In 1917 he retired from professional work, honoured by his fellow practitioners, beloved by his patients and respected by all. Many years ago he was well known as an artistic amateur photographer. He was a skilled painter in oils and water colours and for several years he was a prominent member of the Queensland Art Society.

He married Minnie, the eldest daughter of the late C. R. Haly, of Taabinga Station, in the Burnett district. He is survived by his widow, two sons and one daughter.

RICHARD PERCY HILL.

WE regret to announce the death of Dr. Richard Percy Hill, Assistant Medical Officer at the Goodna Mental Hospital, which took place on October 3, 1921.

Books Received.

HYGIENE FOR HEALTH VISITORS, SCHOOL NURSES AND SOCIAL WORKERS, by C. W. Hutt, M.A., M.D., D.P.H.; 1921. London: Methuen & Company, Limited; Demy 8vo., pp 382, illustrated by 82 figures. Price: 12s. 6d. net.

Medical Appointments.

DURING the absence of DR. RALPH WHISHAW (B.M.A.), DR. E. BRETTINGHAM-MOORE (B.M.A.) has been appointed Certifying Medical Practitioner under the *Workers' Compensation Act* for the City of Hobart and the Municipal Districts of Kingborough, Glenorchy and Clarence, Tasmania.

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THE appointment as Certifying Medical Practitioners under the *Workers' Compensation Act* of DR. D. S. HENDERSON (B.M.A.) for Green Ponds, of DR. H. B. MOORHEAD (B.M.A.) for Oatlands, of DR. H. J. ORR (B.M.A.) for Ross and Campbell Town, and of DR. J. A. NEWELL (B.M.A.) for Launceston and the District of St. Leonards is also announced in the *Tasmanian Government Gazette*.

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DR. C. V. SINGLE (B.M.A.) has been appointed Government Medical Officer at Moree, New South Wales.

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THE appointment of DR. K. F. VICKERY (B.M.A.) as Junior Assistant Microbiologist in the Department of Public Health, New South Wales, has been confirmed.

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DRS. JOHN MCKEE (B.M.A.) AND NOEL BENSON CHARLTON have been appointed Health Officers in the Department of Public Health, Queensland.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

HOSPITAL FOR SICK CHILDREN, BRISBANE: Permanent Medical Superintendent.

NOTICE TO AUTHORS.

IN July, 1919, the Directors of the Australasian Medical Publishing Company, Limited, determined that the cost of preparing blocks for the illustration of articles published in THE MEDICAL JOURNAL OF AUSTRALIA should be borne by the Company. Prior to this date the authors were required to pay for the blocks. We have the accumulation of seven years in our keeping. Authors who require the blocks for which they have paid, are requested to apply for them as soon as possible. It is proposed to destroy all unclaimed blocks on November 1, 1921.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Societies' Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phœnix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Manchester Unity Independent Order of Oddfellows Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 3, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, 6, Bank of New South Wales Chambers, St. George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

OCT. 18.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
OCT. 19.—Western Australian Branch, B.M.A..
OCT. 20.—Western Medical Association (New South Wales).
OCT. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
OCT. 26.—Victorian Branch, B.M.A.: Council.
OCT. 27.—South Australian Branch, B.M.A..
OCT. 28.—New South Wales Branch, B.M.A..
OCT. 28.—Queensland Branch, B.M.A.: Council.
OCT. 31.—Victorian Branch, B.M.A.: Council Nomination Papers issued.
NOV. 4.—Queensland Branch, B.M.A..
NOV. 8.—Victorian Branch, B.M.A..
NOV. 8.—Tasmanian Branch, B.M.A..
NOV. 8.—New South Wales Branch, B.M.A.: Ethics Committee.
NOV. 9.—Victorian Branch, B.M.A.: Final Day of Nomination for Election to the Council.
NOV. 9.—Melbourne Pædiatric Society (Victoria).
NOV. 10.—Victorian Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)